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Manufacturers' Record.

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BALTIMORE, DECEMBER 29, 1904.

Simon D. Chittenden, Tallahassee, Fla., writes to the Manufacturers' Record as follows:

I have learned the value of your periodical, and know how essential it is that every Southern business man should peruse it weekly and keep it at hand for reference. I therefore enclose herewith my check to your order for \$4 for one year's subscription, commencing with January 1, 1905.

FORESTRY.

It is expected that the American Forest Congress to be held at Washington, D. C., January 2-6, will give a strong impetus to the already healthy movement for intelligent handling of the timber resources of the United States. The importance of the gathering has already been recognized in the appointment of delegates to the congress by the governors of nearly half of the States of the Union and in the promise from 24 of the leading railroads of the country that they will send official representatives, including the presidents of 12 of the roads. Lumber associations, as well as lumber companies, will send possibly the largest number of delegates, but grazing, mining, telephone and telegraph interests will also be represented, as well as State officials, including those charged with the care of the forests. The program will include discussion of such topics as the importance of the public forest lands to irrigation; the lumber industry and the forests, covering the changed attitude of lumbermen towards forestry; the rise in the value of stumpage, and the practicability of forestry on the lands of the pulp companies; the importance of the public forest lands to grazing, with some treatment of the practical results of the regulation of grazing in the reserves; forestry in relation to railroad supplies; the importance of forest lands to mining, and national and State forest policy. At a popular meeting, President Roosevelt, the French Ambassador Jussarand, President Howard Elliott of the Northern Pacific Railroad, United States Senators Proctor of Vermont, Bard of California and Simmons of North Carolina, Chancellor B. L. Wiggins of the University of the South, President J. J.

Hill of the Great Northern Railroad, Congressman Lamb of Virginia and Messrs. R. L. McCormack, secretary of a large lumber company, and F. J. Hagenbarth, president of the National Live-Stock Association, will make addresses dealing with the subject from their respective standpoints. The congress will certainly bring together a great number of men vitally concerned with the preservation of the timber supply of the country, and the four or five days of discussion should be sufficient to harmonize what are superficially conflicting interests and bring about the formulation of a broad policy upon which State, nation and individual may co-operate to the advantage of the whole.

Advertisements of Southern localities offering special advantages for the location of manufacturing enterprises will be found on pages 56 and 57.

SOUTH CAROLINA DIVERSIFIES.

Though investments in cotton mills in South Carolina during the year have not been up to the limit reached in recent years, industrial activity in that State has by no means been relaxed, judging from the record of charters granted. These have been for 15 cottonseed-oil mills with an aggregate capital of \$312,000, eight clayworking plants with an aggregate capital of \$1,163,000, a lime company, a tin-mining company, lumber companies, granite companies, ice companies, etc., most notable among the new undertakings perhaps being those for the development of the clay deposits, attributed by the Columbia State to a treatise on the subject by Mr. Earle Sloan, and those for the development of water-power for electric-light and power purposes, representing an investment of hundreds of thousands of dollars. The situation in the market for raw cotton was largely responsible for the comparative slackness in cotton-mill construction, though one must also take into consideration the inclination to enlarge the operations of existing plants. But this slackness did not mean any loss of industrial vigor. The chartering of many other industries is evidence of healthy diversification in manufacturing. South Carolina is not content to carry its eggs in one basket.

A COTTON INCIDENT.

An Englishman interested in Russian mills acknowledging that cotton for the mills can be purchased cheaper from New Orleans than from India or Egypt is a significant contribution to the current discussion of cotton. It was made at New Orleans by Sir Arthur Hamilton, who said that the three mills in which he is interested proposed to use the lower quality of American cotton in preference to the Indian and Egyptian staple which they have worked for several years. He believes that America controls the situation, and that any grade of cotton can be delivered

from New Orleans in competition with other cotton ports of the world. That belief upon which Sir Arthur intends to act has a different color from much of the recent talk about cotton, especially that coming from abroad.

MISSISSIPPI INVITES.

One of the best speeches at the Cotton and Corn Carnival at Jackson was that of Capt. W. H. Hardy of Hattiesburg, treating especially of the resources of the piney-woods region of South Mississippi. The speech was, in fact, a forecast of the wealth to be enjoyed with the full exertion of energies now operating in lumbering, farming and manufacturing in that region. Captain Hardy estimated that in the 10,000 square miles of South Mississippi there are 4,000,000 acres of standing pine timber that will cut during the next 40 years 28,000,000,000 feet of lumber, representing \$280,000,000, to say nothing of the value of naval stores manufactured by retorting from the resinous stumps, limbs and tops of logs and the utilization of sawdust, slabs, etc., in the manufacture of merchantable products, such as wood alcohol, turpentine, tar and resin oil, and paper from pine shavings. After the timber has been cut, as Captain Hardy pointed out, the land becomes quickly available for farming, and already the trucking business in that quarter is well under way, with its natural adjunct, canning factories. Plants which handle sweet potatoes and syrup are now in operation at several points, and it is believed that within the next year 50 or 100 plants will be established to can peaches, pears, strawberries, beans, peas, tomatoes and corn. The railroads of that section are doing their utmost to extend the saw-milling operations and to facilitate the settlement of cut-over lands and the establishment of minor industries.

The situation in Southern Mississippi, largely pioneer in some respects, is duplicated in other parts of the State to such an extent that Mr. H. E. Blakeslee of Jackson, secretary of the Greater Mississippi Association, has recently presented through the columns of the New Orleans Times-Democrat the opportunities of Mississippi, which he styles "a State of practically undeveloped resources." His article will be found illuminating for homeseekers and investors. He tells of the rich lands of the Yazoo Delta, practically two-thirds of which is still in the woods and selling at from \$6 to \$12 per acre; of the pine hills of the northern part of the State, selling at from \$1 to \$5 per acre and especially adapted for stock-raising and the culture of fruits and vegetables; of the rich and productive eastern prairie section, pretty well in cultivation, and of the southern long-leaf district, where truckers are realizing \$100 an acre. He points to the millions upon millions of dollars' worth of raw material shipped every year to other States and brought back as manufactures to Mississippi, and instances espe-

cially the small amount of the million bales of cotton annually produced which is manufactured in the State and the splendid chances for woodworking establishments. He says:

A great field for development in the State is that of special machinery, such as is demanded and being put in use generally for the purposes required by varied manufactures. Since the State has begun to experience an industrial awakening there is a market for many kinds of machinery that the maker in Massachusetts or Pennsylvania cannot supply from a lack of knowledge of the requirements of the same. The enormous increase in the use of gasoline engines offers a rich field for the manufacturer. Thousands are coming into use in the State, yet there is not a place within its borders where they are made. No veneer-cutting machinery is made here, yet our handsome hardwoods and the cheaper woods for boxmaking demand that such machines be used, and often under conditions prevailing nowhere else. Improved farm machinery is coming into general use, and the demand is constantly increasing with requirements that would offer large returns to the man who would come here, study what was needed, make it from materials that are low in price, considering the quality, and place it on the market. The dairy interests of the State show a healthy increase, yet no man builds a separator or churn. Only a few concerns in the State manufacture machinery, but it is noted that those who do are on the high road to success, and the factories are run overtime to keep up with orders.

Inexhaustible beds of fine clays abound throughout the State and offer great inducements for the manufacturer of brick, tile, etc. The enormous amount of building being done in the State calls for more than is made here, and other States must be called upon to supply the demand. In almost every section there are beds of clay that make the very best of brick. Tile and fire-clay can be found in hundreds of places, yet the supply at present largely comes from outside sources. In some sections there are beds of fine clay and kaolin that would make a splendid quality of semiporcelain ware that can be bought for the remarkably low price of land in the community. This would offer a productive field for men with the money and experience to take hold of. There are many possibilities of manufacture in the clays of the State that cannot be enumerated at this time.

There are a number of beds of fine building stone in some sections of the State, yet the magnificent new Capitol just completed at a cost of a million and a quarter dollars was built of stone from Indiana. A comprehensive display of this stone was made at St. Louis, and some attention is being attracted to it. There is a field for development here that would net the pioneers a handsome profit.

Surely these suggestions are worthy of sober consideration on the part of manufacturers and other capitalists elsewhere. Mississippi is waiting their touch, and will, while reaping from it great advantage, repay to the limit, with handsome interest besides.

MINERAL TEXAS.

Another valuable bulletin has been issued by the University of Texas Mineral Survey containing illustrated report of reconnaissance in Trans-Pecos Texas north of the Texas & Pacific Railway made by Mr. George Burr Richardson of the National Geological Survey in co-operation with the State of Texas. This is an important contribution to knowledge of the geology and water resources of a portion of Texas which will be of value to many

persons. The mineral resources of the region specially are varied, including tin, silver and copper in quantities known to be valuable, and gold, lead and other metals in small amounts. Coal has been discovered this year, a bed six feet thick having been struck at a depth of 244 feet in sinking a well eight miles east of Fort Hancock. This occurrence will be further exploited. Gypsum, salt, petroleum and native sulphur also occur in greater or less quantities, while building stones, marbles, limestones and clay are found, and the presence of underground water is widespread. The bulletin discusses these topics in detail, and is an interesting addition to the publication of the survey since July, 1901, including treatment of petroleum, sulphur, oil, quick-silver, silver, coal, lignite and asphalt rock.

A SEA-LEVEL PANAMA CANAL.

The statements recently made to the House committee on Interstate and foreign commerce by John F. Wallace, chief engineer of the Isthmian Canal Commission, furnish abundant food for thought. The magnitude of the excavation that would be required for the construction of a sea-level canal has led to the general acceptance of the idea that a high-level waterway with locks would prove to be the most feasible and most expedient plan. Mr. Wallace, however, advocates the construction of a sea-level canal as the best in the end from every point of view, although the first cost would be greater and the time of construction would be longer than in the case of any of the other plans that have been under consideration.

His summary of the various plans presents these points:

A 60-foot-level canal would cost \$225,000,000, could be opened for traffic in 10 years, and could be completed in 12 years.

A 30-foot level canal would cost \$250,000,000, could be opened for traffic in 12 years, and could be completed in 15 years.

A sea-level canal would cost \$300,000,000, could be opened for traffic in 15 years, and could be completed in 20 years.

Up to the undertaking of this great project by the United States all consideration of the problem of cutting the Isthmus has been based practically upon plans prepared many years ago by the original promoters and upon conditions which have been obsolete for many years. In fact, the chief work of the Commission thus far has been the determination of a new basis for the entire undertaking, with proper regard for the changed conditions that now exist. It has been found that the surveys, plans and calculations of the old French engineers are defective in many essentials, so much so that it has been necessary practically to start anew in the consideration of the entire problem.

Transportation conditions, too, have changed so radically in the past 15 or 20 years, and promise such further progressive changes, that the canal must now be designed and constructed to meet requirements that never were anticipated when the work was begun.

While Mr. Wallace's advocacy of a sea-level canal may be startling at first to many people, a careful consideration of the reasons he gives and others which suggest themselves is likely to lead to the same conclusions he has reached. In the first place, the construction of a high-level canal involves many complicated engineering problems which enlarge as the summit level is raised and

the number of locks is increased. So apparent is this fact that Mr. Wallace, in addressing the House committee, touched very lightly on the 90-foot-level plan, upon which the former Commission estimated, as the possibility or practicability of building the high Bolo dam is yet to be determined. A summit level of 30, 60 or 90 feet necessitates the construction of a proportionate number of locks, difficult and costly to build, expensive to maintain and to operate, and greatly impeding the passage of vessels. The construction of a sea-level waterway, on the other hand, eliminates at once the locks, with their many obvious disadvantages, and reduces the problem to the comparatively simple proposition of a greatly-increased volume of excavation. The mere digging of a larger and deeper ditch is not a problem that need cause alarm with the skill and modern appliances which the Commission has at command.

A sea-level canal once completed would possess important advantages in maintenance and operation and in freedom from hindrance to navigation. Furthermore, a sea-level canal could be widened and deepened at any time without interference with its use. This is no small consideration in view of the constantly-increasing depth of ocean steamships. Nobody can tell today what the limit of draft will be 10, 20 or 50 years hence. There can be no comparison between the respective advantages of a sea-level and a high-level canal when it comes to a general increase of depth throughout. The cost and inconvenience of re-constructing all the locks of a high-level canal to provide for vessels of greater draft is one of the strongest arguments against the construction of such a waterway.

The estimated cost of \$300,000,000 for a sea-level canal as against \$250,000,000 for a 90-foot summit, if the adoption of so high a level should be determined to be feasible, is not a matter of very great importance. In fact, the first cost of any plan for piercing the Isthmus should not be the determining factor. Having undertaken this work, it is incumbent upon the United States government to construct the canal upon the most advantageous plan, not in the cheapest manner. No manufacturer who has the money or the credit considers the first cost of a plant as against efficiency and economy and volume of output, and it is upon precisely these conditions that the construction of the Panama canal should proceed. If it is worth while to build any kind of a canal, it is not good business policy to build anything but the best, the one which will give the best results from every point of view when completed.

The element of time, however, is likely to appeal most strongly to those who have waited so long and so impatiently for the construction of a connecting link between the two oceans. Mr. Wallace estimates from the information now obtainable that it would take 15 years to open a sea-level canal to vessels as against 10 years for a 60-foot-level canal. But, after all, what is a matter of a few years more or less in the construction of an interoceanic waterway that is to be used not alone by the present generation, but through all time? Unless some far weightier objections can be offered, these few years of additional time ought not to be permitted to prevail against what appear to be immeasurably greater advantages in favor of a sea-level canal.

Mr. Wallace's recommendation of a waterway at sea level comes opportune-

ly in confirmation of a manifestly increasing sentiment in favor of this plan. His estimates and recommendations, however, must be accepted subject to revision as the knowledge of the Commission shall become more complete. It is more than likely that further investigation of conditions on the Isthmus and more exhaustive consideration of details of construction will only confirm the opinions and estimates which Mr. Wallace has given in a preliminary way. It may be expected with reason that his estimates of cost and time for the construction of a sea-level canal will be reduced materially in the final calculations.

The American people primarily, and incidentally all the world, want a canal across the Isthmus as soon as it can be had, but nobody wants it so badly as to be willing to take a cumbersome makeshift when a far more useful waterway can be had by waiting a few years longer and by spending more money on a commercial thoroughfare that will be cheap at any cost.

Mr. H. E. Blakeslee, Jackson, Miss., secretary of the Greater Mississippi Association, writes to the Manufacturers' Record as follows:

Our Corn and Cotton Carnival was a grand success from every point of view, and we desire to thank the Manufacturers' Record for the important part it played in bringing about the happy result.

J. C. Sproull, president Anniston Hardware Co., Anniston, Ala., writes to the Manufacturers' Record as follows:

You can send us the Manufacturers' Record for a year, as we certainly appreciate the efforts you are making for this section of the country, and we want to hold up your hands in it.

Mr. Louis R. Wilson, librarian of the University of North Carolina, referring the Manufacturers' Record as follows:

No paper stands in such a vital relation to the South. The back numbers contain a complete history of industrial activity in the South so far as they go back.

The Southern Farm Magazine.

In his monthly talk with farmers in the Southern Farm Magazine for January Col. J. B. Killebrew indulges in some practical suggestions which should go straight to many a farmer's mind. He takes a wise view of the servant problem, advocates an occasional outing and dwells upon the necessity for making the country home attractive to the boys and for giving them a personal interest in the farm. Above all, he urges farmers to escape from debt as rapidly as possible and to incur no new debts.

Prof. Andrew M. Soule discusses farmers' institutes and the value of education, cattle-feeding in the South, soy-bean silage, Aberdeen Angus as beef makers, feeding the dairy cow economically, the management of land for cow peas. Persons concerned about the extension of dairying in the South will be interested in an article on the development of the Jersey cow by R. M. Gow. Other leading articles are "The Necessity for a Dog Law" by Col. J. B. Killebrew, "Irrigation for Rice" by Prof. T. U. Taylor, "Agriculture for a Year" and "Cotton's Price Should Not Regulate Land Values," by L. Burns, Jr.

The department of immigration is full of information about the movement of new settlers to the South, and in the other departments are discussed topics of timely interest to the general reader in town and country.

The Southern Farm Magazine is published monthly by the Manufacturers' Record Publishing Co., Baltimore, Md.

Its regular price is \$1 a year, but under a special offer soon to be closed new subscribers may obtain it for 25 cents a year.

For Baltimore Improvements.

The executive committee of the Municipal Improvement Conference for Baltimore has selected as a finance committee to devise plans for the financing of the various loans contemplated in connection with the improvements to be promoted by the conference Messrs. Michael Jenkins, president of the Safe Deposit & Trust Co., chairman; Harry A. Orrick, president of the Stock Exchange; C. C. Homer, president of the Clearing-House Association; Eugene Levering, president of the National Bank of Commerce; Dr. Jacob H. Hollander, economist, of Johns Hopkins University; Robert M. Rother, president of the Hopkins Place Savings Bank; Frank S. Hambleton, banker and broker; John T. Stone, president of the Maryland Casualty Co.; Wilton Snowden, president of the finance commission, ex officio; City Comptroller George R. Hefner, ex officio; City Register Harry F. Hooper, ex officio. Mayor Timanus and City Solicitor Bruce will act in an advisory capacity with the committee.

Welcoming English Spinners.

Through the Manufacturers' Record the following invitation to the English spinners has been forwarded from the Calvert Business League of Calvert, Texas:

"The Calvert Business League notes with pleasure the contemplated visit of foreign spinners to the cotton fields of the United States, and by special authority and request we desire to extend to you a most cordial invitation to come directly to Texas on reaching our shores, from thence direct to Calvert, Robertson county, Texas, where will be extended you due courtesy and shown you within a radius of five miles the most productive lands in the entire State."

To Talk Immigration.

The Augusta (Ga.) Chamber of Commerce will make as a feature of its annual meeting January 12 talks on immigration, and it has invited to be the speakers Messrs. Frank P. Sargent, commissioner-general of immigration, Washington, D. C.; M. V. Richards, land and industrial agent of the Southern Railway, Washington, D. C.; J. W. White, general industrial agent of the Seaboard Air Line, Portsmouth, Va.; E. J. Watson, commissioner of immigration, Columbia, S. C.; O. B. Stevens, commissioner of agriculture, Atlanta, Ga.; T. B. Thackston, agent of the land and industrial department, Southern Railway, Columbia, S. C.

For Good Roads.

The National Good Roads Convention will meet at Jacksonville, Fla., January 19, 20 and 21. It will be attended by representatives of railroad lines, commercial organizations and State and municipal governments, and a number of distinguished men have been invited to make addresses. The National Good Roads Association, of which Mr. W. H. Moore is president, has arranged with leading railroad companies to operate good-roads special trains during the coming year. These trains, which are effective in the campaign for good roads in the country, will visit 36 States and Territories in 1905.

Coal in the Transvaal.

Coal was discovered in the Transvaal in 1887, and is mainly an auxiliary to the mining of gold and diamonds, although it supplies the needs of the railway, small industries and householders. The production has gradually increased until that of last year amounted to 2,258,284 tons.

RAILROAD CONSTRUCTION DURING 1904.

The South and Southwest Built More Than 2400 Miles of New Line, With Over 4000 Miles in Prospect for 1905.

The Manufacturers' Record here presents the results of a careful review of railroad construction completed during the year 1904 in the South, together with Missouri, Indian Territory and Oklahoma. It shows that since January 1 last there were built 2420.7 miles of line, and that about 4050.3 miles will probably be built during 1905 in those States and Territories. In this estimate there are not included any figures for new corporations which have not begun construction, notwithstanding that in some instances contracts have been awarded. Only a small amount of electric railway is noted, consideration being made only of mileage which will perform service for both passengers and freight, as do steam roads. This covers but 37.5 miles for 1904 and 100 miles for 1905.

To prepare this review a painstaking canvass has been made of all the railroad companies in those sections of the country which it covers, and in a majority of cases the figures have been obtained by the Manufacturers' Record through the courtesy of the engineering departments. Other data collected by this paper during the year has also been employed to complete these statistics, which, it must be remembered, do not cover the building of any second track, but only that which would be really new construction.

Missouri and Texas stand at the head of the list in the amount of new line built during 1904, the amounts credited to each being very nearly equal, about 380 miles. Next comes Arkansas with 233 miles, West Virginia with about 200 miles, Mississippi with about 180 miles, Indian Territory 152 miles, Alabama 135 miles, etc. In the Indian Territory and Oklahoma, each of which built so much railroad in 1903, there was comparatively little constructed this year. Louisiana also experienced a large decline, but Texas held up well, notwithstanding that this has not been a very active year in railroad construction. The smallest amount of line built in any State was in Kentucky, 15 miles.

The prospect for 1905 indicates that a large amount of new line will be built. Texas heads the list with 849 miles in view, and it is somewhat remarkable that Georgia comes second with the prospect of 490 miles of construction, that State being ahead of the Indian Territory, which is third with 487 miles projected. The latter, by the way, proposes more line than she did at the beginning of this year; but in Oklahoma the outlook is smaller, only about 100 miles being in sight, although it is probable that this amount will be exceeded, notwithstanding that her construction this year is only 102 miles. Florida proposes to build about 350 miles, including the proposed extension to Key West. Arkansas looks for the building of 372 miles, North Carolina for 243 miles, Mississippi for 221 miles, Louisiana for 219 miles, West Virginia for 209 miles and other States for lesser amounts, the smallest being 30 miles, in Missouri.

The Southern Railway reports the largest amount of second track built, that being the extensive improvement of 80 miles between Alexandria and Orange, Va., which included changes in grade and alignment. The Richmond, Fredericksburg & Potomac and the Washington Southern railroads are also making extensive improvements upon their line between Washington and Richmond, and

the new roadway will all be put in service early in 1905.

The following table shows the amount of line built in 1904 and the new line projected for 1905 in each State and Territory covered by the review:

States and Territories.	Miles built in 1904.	Miles to be built in 1905.
Alabama.....	135.1	87.5
Arkansas.....	233.5	372
Florida.....	68.6	351
Georgia.....	125.2	490.5
Indian Territory.....	152.7	487
Kentucky.....	15	55.8
Louisiana.....	125.6	219
Maryland.....	25	65
Mississippi.....	179.7	221.5
Missouri.....	381.7	30
North Carolina.....	83.9	243.1
Oklahoma.....	102.3	100
South Carolina.....	29.7	70
Tennessee.....	120.8	109.7
Texas.....	380.5	849
Virginia.....	62	90.2
West Virginia.....	199.4	200
Total.....	2420.7	4050.3

Here follows a detailed statement of the amount of line built by the various roads during the year just closing, and, as far as possible, the new construction decided upon and which will probably be built in 1905:

Aberdeen & Rockfish Railroad.—Extension to Hope Mills, N. C., 7 miles.

Alabama Central Railroad.—For 1905, Booth Station to Autaugaville, Ala., 9 miles.

Alcohu Railroad. — From Hudsons to Beulah, S. C., 3 miles.

Arkansas Southern Railroad.—Extension southeast from Winnfield, La., 9 1/2 miles towards Alexandria. For 1905, from end of extension to Alexandria, 35 miles.

Asheville & Craggy Mountain Railway. Asheville, N. C., to the W. T. Weaver Power Co.'s plant on the French Broad river, 5 miles.

Atchison, Topeka & Santa Fe Railway System.—On the Gulf, Colorado & Santa Fe Railway, Bragg to Saratoga, Texas, 9.1 miles. For 1905, Owasso to Tulsa, I. T., 12 miles; on Jasper & Eastern Railway, Kirbyville, Texas, towards Alexandria, La., 50 miles; total 62 miles.

Atlantic & Western Railroad.—From Sanford, N. C., 8 miles. For 1905, 15 miles.

Augusta & Florida Railway.—For 1905, about 50 miles, all in Georgia.

Baltimore & Belair Electric Railway.—Hamilton to Carney, Md., 3.5 miles. For 1905, Carney to the Gunpowder river, 3 miles.

Baltimore & Ohio Railroad. — From Lemley Junction to Buckhannon, W. Va., 12.6 miles.

Bay Minette & Fort Morgan Railroad. For 1905, from Bay Minette, Ala., towards Fort Morgan, Ala., 45 miles.

Beaumont, Sour Lake & Western Railway.—From Meeker to Sour Lake, 12 miles. For 1905, 125 miles.

Bee Tree Railroad.—From Swannanoa Station, N. C., to Craggy Mountain, 8 miles.

Belton & Temple Traction Co.—Belton to Temple, Texas, 12.5 miles.

Birmingham & Lineville Railroad.—Lineville to Pyriton, Ala., 7 miles.

Birmingham Belt Railroad.—In North Birmingham, 2 miles.

Birmingham, Columbus & St. Andrews Bay Railroad.—For 1905, from Chipley, Fla., to St. Andrews Bay, 50 miles.

Brookhaven & Pearl River Railway.—Nola, Miss., to Monticello, Miss., about 10 miles.

Burning Springs Railway.—From connection with the Kanawha & Michigan Railway in West Virginia, 1.2 miles.

Burnside & Cumberland River Railway. Extension to Burnside, Ky., 1 mile.

Cache Valley Railroad. — For 1905, from Paragould to Walnut Ridge, Ark., 27 miles.

Caldwell & Northern Railway.—Lenoir, N. C., to Collettsville, N. C., 10.2 miles. For 1905, 13.1 miles.

Cape Girardeau & Eastern Railway.—Cape Girardeau to Jackson, Mo., 10 miles.

Carolina & Western Railroad.—Branch 3 miles long. For 1905, extension of branch, 2 miles; extension of main line to Grays, S. C., 2 miles; total, 4 miles.

Chesapeake & Ohio Railway.—Paintsville, Ky., to Prestonsburg, Ky., 14 miles; Big Creek to Logan, W. Va., 15 miles; total, 29 miles. For 1905, from Prestonsburg, Ky., to Elkhorn City, Ky., 54 miles; from Logan to Holden, W. Va., 15 miles; total 69 miles.

Chesterfield & Lancaster Railroad and Bennettsville & Cheraw Railroad.—Spur track, 1 mile in South Carolina.

Chicago, Burlington & Quincy Railway. From Old Monroe, Mo., to Mexico, Mo., 63 miles.

Chicago, Rock Island & Pacific Railway. — Versailles, Mo., to Kansas City, Mo., 122 miles; Devall's Bluff to Des Arc, Ark., 14 miles; total, 136 miles.

Coal & Coke Railway.—Otter to Gassaway, 28 miles; Elkins to Sago, 14 miles, all in West Virginia; total, 42 miles. For 1905, from Sago to Gassaway, W. Va., 52 miles.

Coal River & Western Railway.—From forks of Coal river to Fork Creek, W. Va., 5 miles; from mouth of Briar creek to Dungriff, W. Va., 5 miles; total, 10 miles.

Conway, Coast & Western Railway.—For 1905, to connect Conway, Cool Springs, Britton's Neck and Marion, S. C., about 36 miles; entire line when built to be from Sumter, S. C., via Conway to Southport, N. C., 135 miles.

Cotton Belt & Northern Railroad.—Onalaska, Ark., to Pritchard, Ark., 4.5 miles.

Crowell & Spencer Lumber Co.—For 1905, from Longleaf, La., to Leesville, La., about 12 miles.

Darien & Western Railroad. — From Darien Junction to Liberty City, Ga., 17.7 miles; from Crescent to Bellville, 2 miles; total, 19.7 miles.

Deepwater Railway.—From Deepwater, W. Va., towards the Bluestone river, 5 miles. For 1905, 50 miles.

W. Denny & Co.'s Lumber Railroad.—For 1905, from Moss Point to Lucedale, Miss., about 35 miles; contract let for 15 miles.

Denver, Enid & Gulf Railroad.—For 1905, from Enid, O. T., to northern boundary of Oklahoma, 50 miles; line to go to Kiowa, Kan., 10 miles farther.

Dublin & Southwestern Railroad.—Dublin to Rentville, Ga., 12 miles. For 1905, may be extended to Abbeville, Ga., about 50 miles.

Ellaville, West Lake & Jennings Railroad.—South of Ellaville, Fla., 10 miles.

Estatote Electric Co. (formerly Asheville & Weaverville Railway).—For 1905, from Asheville, N. C., to Boonford, N. C., about 50 miles.

Florida East Coast Railway.—Miami to Homestead, Fla., 28 miles. For 1905, possibly an extension from Homestead to Key West, Fla., 136 miles.

Franklin & Abbeville Railway.—For 1905, from New Iberia, La., to Bayou Vermilion or Hunter's Canal (Milton Postoffice), 20 miles.

Freeo Valley Railway.—For 1905, extension to Princeton, Ark., about 10 miles.

Garbutt & Donovan Railroad.—Stillmore to Lyons, Ga., about 16 miles.

Georgia, Florida & Alabama Railway and Carrabelle, Tallahassee & Georgia Railroad.—For 1905, 150 miles.

Glade Mountain Railroad (Glade Mountain Lumber Co.) — Near Atkins, Va., 4 miles.

Great Falls & Old Dominion Railway. For 1905, Lewinsville to Langley, Va., 7.2 miles.

Greenville & Knoxville Railway.—For 1905, Greenville, S. C., to Travelers' Rest, S. C., and beyond, 30 miles.

Gulf & Ship Island Railroad.—Mendenhall to Shivers, Miss., 16 miles; branch near Maxie, 1 mile; total, 17 miles. For 1905, Silver Creek to Columbia, Miss., 27.5 miles; terminal tracks at Gulfport, 2 miles; total, 20.5 miles.

Gulf, Texas & Northern Railway.—From Marshall, Texas, south 13 miles. For 1905, to be continued to Logansport, La., about 40 miles; also extension north from Marshall.

Gurdon & Fort Smith Railway.—From Antoine, Ark., northwest 5 miles; at Caddo Gap, Ark., 3 miles; total, 8 miles. For 1905, about 50 miles.

Hagerstown Electric Railway.—Boonsboro to Myersville, Md., 6 miles.

Hayneville & Morganville Railroad.—For 1905, from Morganville to Hayneville, Ala., 8.5 miles.

Hollins, Hedfin & Sylacauga Railroad.—Wildwood to Woodbine, Ala., 3 miles. For 1905, Woodbine to Rockford, Ala., 24 miles.

Holly River & Addison Railway.—For 1905, Webster Springs to Leatherwood, W. Va., 11 miles.

Illinois Central Railroad (on Yazoo & Mississippi Valley Railroad).—For 1905, from Mattson to Roundaway, Miss., 7 miles.

Imboden & Odell Railroad.—Mouth of Blue creek, connecting there with the Coal & Coke Railway, to Quick's, W. Va., 11 miles. For 1905, from Quick's to Pond Gap, W. Va., 18 miles.

Indian Territory Traction Co.—South arc Alester to Alderson, I. T., 6 miles.

Iron Mountain & Greenbrier Railroad. Branch lines, all in West Virginia, 8 miles. For 1905, 8 miles, all in West Virginia.

Kansas City, Mexico & Orient Railway.—North of Sweetwater, Texas, 7 miles. For 1905 it is proposed to continue tracklaying north of Sweetwater; also to lay tracks south from Fairview, O. T., to Thomas, O. T.

Kansas City, Oklahoma & Houston Railway.—For 1905, Honey Grove, Texas, to Red river, 22 miles; also South McAlester, I. T., to Red river to connect, about 75 miles; total, 97 miles.

Kentucky & Tennessee Railway.—From Barthell to the Big South Fork of the Cumberland river, about 1 mile; from the mouth of Paunch creek on the Big South Fork north to Rock Creek, 3 miles; total, about 4 miles.

Liberty City, Glenville & Manassas Railway.—For 1905, Liberty City to Manassas, Ga., 30 miles.

Liberty-White Railroad. — For 1905, extension of narrow-gauge branch, 6 miles; possibly an extension of the standard-gauge main line from Liberty, Miss., to either Baton Rouge, La., or Natchez, Miss., about 50 miles.

Little Rock & Monroe Railroad.—Felsenthal, Ark., south to Ouachita river, 31 miles. For 1905, from the river to Monroe, La., 14 miles; only about 5 miles in Arkansas.

Little River Lumber Co.—Near Townsend, Tenn., 7 miles. For 1905, 7 miles in the southern part of Blount county, Tennessee.

Live Oak & Perry Railroad. — Near Live Oak, Fla., extension 6 miles southwest. For 1905, extension of 45 miles to Perry in Taylor county, and thence to the mouth of the Aucilla river.

Loring & Western Railway.—Extension

sion of 8 miles near Loring, La. For 1905, 5 miles additional.

Louisiana Railway & Navigation Co.—Irene to Bayou Sara, La., 14 miles. For 1905, Bayou Sara to Angola, 24 miles; Baton Rouge to Kenner, 60 miles; Kenner to New Orleans, 10 miles; total, 103 miles.

Louisville & Nashville Railroad.—On the Cain Creek branch of the North Alabama Railroad, 18.05 miles of main line and 12.34 miles of branches; on the Oneonta & Attalla Railroad, from Altoona, Ala., to connect with the Nashville, Chattanooga & St. Louis Railway near Attalla, Ala., 15.56 miles; tunnel at Tunnel Gap to be completed next spring; Turkey Creek branch, from Fedora, Ala., eastward to Indio, 2.95 miles; Hogeland branch, near Coaldale, Ala., .65 mile; Graves branch, from North Birmingham, Ala., 2.62 miles to Graves mines; Boyle's Gap branch, from the Graves branch at North Birmingham northeast to connect with the South & North Alabama Railroad near Five-Mile creek, 2.08 miles; Deming branch, from Mattawana, Ala., to Deming, 1.73 miles; on the Cumberland Valley division branch, from milepost 198, about .5 mile; entire length when completed to be 2.12 miles long to coal mines; on the Pennington Gap line, from Pennington, Va., up Powells river, 3 miles; on the Knoxville, Lafollette & Jellico Railroad, about 53 miles, completing the line excepting 1 mile at Dossett, Tenn.; Cow Creek branch and spurs, from Dossett, Tenn., via Oliver Springs to coal field, 13 miles; Clear Fork branch, from Holton, Tenn., into coal fields, 6.1 miles; Hog Camp spur, from Ilford, Tenn., to coal fields, 2.9 miles; spur tracks at Knoxville, 4.3 miles; total, 138.78 miles. For 1905, from milepost 198 on the Cumberland Valley division to lands of the Bell-Jellico Coal Co., about 1.62 miles; on the Pennington Gap line, 4 miles; from milepost 197 on the Cumberland Valley division, for the Ely-Jellico Coal Co., about 1 mile; other coal branches from the same division, about 11.25 miles; on the Knoxville, Lafollette & Jellico Railroad, 1 mile; on the Atlanta, Knoxville & Northern Railway, from Knoxville to Etowah, Tenn., 60 miles, the changes amounting to building a new line; also on the same road, from Etowah, Tenn., to Cartersville, Ga., 87 miles; total, 165.87 miles.

Lunenburg Lumber Co.—Near Meherin, Va., 10 miles; line to continue 10 or 15 miles farther to connect with the Norfolk & Western Railway.

Martindale & Ouachita River Railway, Near Bolinger, La., 2 miles.

Mendvale & Somerville Railroad (owned by the Mead & Speer Company of Pittsburgh, Pa.)—For 1905, 14 miles of lumber railroad on Strange creek in Clay and Nicholas counties, W. Va.

Mississippi & Eastern Railroad.—Extension to Melvin, Miss., 8 miles.

Mississippi River & Bonne Terre Railway.—Bonne Terre to Owl Creek, Mo., 6.5 miles.

Missouri, Kansas & Texas Railway.—From Oklahoma City, O. T., to Ada, I. T., 84.3 miles; from M. K. & T. mines to Wilburton, I. T., 3.7 miles; from Granger, Texas, via Georgetown to Austin, Texas, 45.50 miles; Gaines Creek to M. K. & T. mines, in the Indian Territory, 13 miles; total 146.50 miles.

Missouri, Oklahoma & Gulf Railway (formerly Muskogee Union Railroad).—Muskogee to Corrota, I. T., 10 miles. For 1905, 375 miles, mostly in the Indian Territory, 50 miles of grade being done south of Muskogee towards the Red river.

Missouri Pacific Railway.—On White River extension, Cotter, Ark., to Oregon Flat, Ark., 34 miles; Carthage, Mo., to

White river crossing at Lucia, Mo., 81 miles; total on this extension, 115 miles; on Memphis, Helena & Louisiana line, from McGehee, Ark., to Latour, Ark., 81 miles; on Eldorado & Bastrop Railway, from Eldorado, Ark., to the Louisiana and Arkansas State boundary, 44 miles; on Farmersville & Southern Railroad, from Little Rock & Monroe junction to Farmersville, La., 23 miles; on Fort Smith Suburban Railway, around the city of Fort Smith, Ark., 6 miles; total, 323 miles.

Midland Valley Railroad.—Bokoshe, I. T., to Tulsa, I. T., 80 miles. For 1905, from Tulsa, I. T., to Wichita, Kan., 200 miles.

Mobile & Ohio Railroad.—Southern Warrior Railway, 15 miles long, completed to Kellerman, Ala.

Mobile, Jackson & Kansas City Railroad.—From Ellisville Junction to Ellisville, Miss., 6.5 miles; from Stringer to Newton, Miss., 39.5 miles; from Ackerman to Noxapater, Miss., 36 miles; from Pontotoc to Dewey, Miss., 33 miles; total, 115 miles. For 1905, from Dewey to Ackerman, Miss., 34.5 miles; from Noxapater to Newton, Miss., 46 miles; total, 80.5 miles.

Monroe & Southwestern Railroad.—From Monroe, La., 15 miles.

Morgantown & Kingwood Railroad.—From Bretz, W. Va., to Reedsville, W. Va., 2.5 miles. For 1905, from Reedsville to Kingwood, W. Va., 12.5 miles.

Nacogdoches & Southeastern Railway (Hayward Lumber Co.)—From Nacogdoches, Texas, southeast, 7 miles. For 1905, 10 miles.

Natchez, Columbia & Mobile Railroad. For 1905, from Booneville to Pearl River, Miss., 7.5 miles.

Nelson & Albemarle Railroad (Albemarle Soapstone Co.)—Esmont, Va., towards Rockfish, Va., about 6 miles. For 1905, to be completed to Rockfish, 6 miles.

New Hope Valley Railroad.—For 1905, from connection with Seaboard Air Line near boundary of Chatham and Wake counties in North Carolina to the southern part of Orange county, 20 miles.

New York, Philadelphia & Norfolk Railroad.—At several points in Virginia and Maryland, 8.6 miles.

Norfolk & Portsmouth Belt Line Railroad.—At Port Norfolk, Va., 1.25 miles. For 1905, up the southern branch of Elizabeth river, 1 mile.

Norfolk & Southern Railroad.—From Mackey's Ferry to Plymouth, N. C., 10.7 miles, a connecting track.

Norfolk & Western Railway.—Naugatuck, W. Va., to Kenova, W. Va., 59.1 miles; on Widemouth branch in Mercer county, West Virginia, to the east approach of Clark's Gap, 13 miles, with three spurs about 8 miles long altogether; on the Iaeger & Southern Railway, extension to Tug Fork branch in McDowell county, West Virginia, from a point above Gary to mines of the Page Coal & Coke Co., 8 miles; extension of the Sandlick spur of the Tug Fork branch, 1.5 miles, to mines of the United States Coal & Coke Co.; extension of the Chestnut Creek branch of the North Carolina extension from Blair, Va., to Galax, 2.72 miles; total, 92.32 miles. For 1905, on the Iaeger & Southern Railway, extension of about 57 miles, which will include a connecting road to be built in Virginia under the charter of the Pocahontas & Western Railroad; extension of the Radford branch to a point near the junction of the Little and New rivers, 3.5 miles; total, 60.5 miles.

North Arkansas Electric Railway & Power Co.—For 1905, from Mount Hersey, Ark., in Searcy and Newton counties, 50 miles.

Northeast Texas Railway.—Extension continued to Cusseta, Texas, 10 miles.

North State Railway.—Cardenas to Angier, N. C., 6 miles.

Ocala, Pinebloom & Valdosta Railway. Extension of 9 miles, connecting with the Wadley & Mount Vernon Extension Railroad, which will be merged with the former.

Orange & Northwestern Railroad.—For 1905, from Buna, Texas, northward 180 miles.

Pamlico, Oriental & Western Railway. From Newbern, N. C., towards Bayboro, N. C., 12 miles. For 1905, extension to Pamlico, 13 miles.

Perla Northern Railroad.—Perla to Magnet, Ark., 11 miles.

Pickens & Addison Railway (Holly Lumber Co.)—For 1905, from Johnsonburg, W. Va., extension of 6 miles.

Plant City, Arcadia & Gulf Railroad.—Plant City to Keysville, Fla., 13 miles. For 1905, about 65 miles. Formerly Warnell Lumber & Veneer Co.'s line.

Powellton Branch Railroad.—To Cardiff Coal Co.'s mines near Fayetteville, W. Va., 2 miles.

Preston Lumber & Coal Co.—For 1905, from Crellin, Md., to headwaters of the Youghiogheeny river, 12 miles.

Raleigh & Pamlico Sound Railroad.—From connection with Seaboard Air Line near Raleigh, N. C., eastward 10 miles. For 1905, to be continued to Greenville, N. C., about 100 miles.

Rockwood & Tennessee River Railway (line owned by the Roane Iron Co.)—From the Cincinnati Southern Railroad near Cardiff, Tenn., to Caney Creek shoals on the Tennessee river, 6 miles, and from Round Island on the south side of the river southward into the iron-ore belt, 4 miles; total, 10 miles.

St. Johns River Terminal Co.—At Jacksonville, Fla., about 6 mile.

St. Louis & North Arkansas Railroad. For 1905, probably 200 miles.

St. Louis & San Francisco Railroad.—Enid to Avar, O. T., 57.8 miles; Evadale, Ark., to Big Creek, Ark., 16.5 miles; on the St. Louis & Gulf line, Dudley to Campbell, Mo., 21 miles, and Zeta to Van Duser, Mo., 11 miles; on St. Louis, Memphis & Southeastern line, Lindenwood to St. Genevieve, Mo., 58 miles; total, 161.3 miles.

St. Louis Belt & Terminal Railway.—For 1905, at St. Louis, Mo., 3.2 miles.

St. Louis, Brownsville & Mexico Railroad.—From Robstown, Texas, to Brownsville, Texas, 141 miles; from Harlingen to San Miguel, Texas, 65 miles; total, 206 miles. For 1905, from Robstown to Bay City, Texas, 142 miles; Robstown to Sinton, Texas, 23 miles; total, 165 miles.

St. Louis Southwestern Railway.—For 1905, possible extension of the Lufkin line.

San Antonio & Aransas Pass Railway. Alice to Falfurrias, 36.4 miles, this being on the Brownsville extension.

Savannah, Statesboro & Northern Railroad.—For 1905, from Savannah to Athens, Ga., 160 miles.

Seaboard Air Line.—Atlanta, Ga., to Rockmart, Ga., 44.5 miles; Coal City, Ala., to Birmingham, Ala., 39.8 miles; total, 84.35 miles.

Shreveport, Alexandria & Southwestern Railway System.—On Sibley, Lake Bisteneau & Southern Railway, 7 miles; on DeRidder & Eastern Railway, 4.5 miles; on Woodworth & Louisiana Central Railway, 5.5 miles; on Louisiana & Pacific Railway, 4.5 miles; total, 21.5 miles; all in Louisiana.

South & Western Railway.—For 1905, from Clinchport, Va., to Tom's Creek, Va., about 35 miles.

Southern Pacific System.—On Morgan's Louisiana & Texas Railroad, from Raceland Junction to Lockport, La., 8.14 miles.

Southern Railway.—Okolona to Vardaman, Miss., 29.7 miles; Barmore, S. C., towards Ware's Shoals Mills, 1.7 miles; spur tracks at Knoxville, Tenn., about 1.8 miles; Bennett's Fork branch, spurs to mines of the Sterling Coal & Coke Co., near Ralsion's Mines, Tenn., 1.6 miles; Badham spur, from near Daley, Ala., to coal property of the Bessemer Land & Improvement Co., 4.8 miles; Middle Fork branch, from Big Mountain spur, west of Oliver Springs, Tenn., westward through Morgan county to coal mines, 2.4 miles; total, 42 miles. For 1905, Piper spur, an extension of the Reynolds spur of the Brierfield, Blocton & Birmingham Railway in Alabama to mines of the Little Cahaba Coal Co., 1 mile; Rector Coal Co. spur, from main line near Buckeye, Tenn., to lands of the Rector Coal Co., 1.5 miles; Cumberland Railway, from Laurel Creek, Tenn., to Tennessee and Kentucky State line, 8.8 miles; Middleboro Mineral Railway, from connection at the Tennessee and Kentucky State line with the Cumberland Railway, eastward in Kentucky, 1.8 miles; Delta Southern Railway, from Elizabeth, Miss., northward, 10 miles; total, 23.1 miles.

South Georgia & West Coast Railway. Extension to Perry, Fla., 11 miles.

Springfield & Southwestern Railway.—For 1905, from Springfield, Mo., south to a connection with the White river extension of the Missouri Pacific Railway, about 30 miles.

J. C. Stiegle Lumber Co.—Near Stokesville, Va., 6 miles.

Suwanee & San Pedro Railroad, including Live Oak & Gulf Railway.—For 1905, about 30 miles, from Perry, Fla., westward.

Tallulah Falls Railway.—From Wylie, Ga., to Clayton, Ga., 7 miles. For 1905, from Clayton, 3.5 miles or more.

Tennessee & North Carolina Railroad. For 1905, from Waterville, N. C., to Waynesville, N. C., 32 miles; also branches into timber lands.

Tennessee Central Railroad.—At Nashville, 3 miles. For 1905, spur from Ozone, Tenn., along Fall creek, 2.5 miles.

Tennessee Railway.—Almy to Huntsville, Tenn., 11 miles.

Texas & Gulf Railway.—For 1905, from Marshall, Texas, south 40 miles towards San Augustine, Texas.

Texas Southeastern Railroad.—For 1905, 12 miles, near Diboll, Texas.

Thomasville & Denton Railroad.—Thomasville to Wadesboro, N. C., 7 miles.

Tombigbee Valley Railroad.—Extension of about 12 miles northward to Healing Springs Station in Washington county, Alabama.

Trenton & Gulf Railroad.—Southward from Eros, La., 8 miles. For 1905, about 35 miles.

Trinity & Brazos Valley Railway.—For 1905, extensions to be made southeast from Mexia, Texas, and northwest from Cleburne, Texas, probably 100 miles altogether, to be done during the year.

Union & Glenn Springs Railroad.—From Union, S. C., to a point on the Seaboard Air Line near Carlisle, S. C., 16 miles.

Union Springs & Northern Railway.—Near Union Springs, Ala., .5 miles.

Vanderbilt Timber, Mining & Southwestern Railway.—Extension of 6 miles to Hopewell, Ala.

Virginia & Kentucky Railway.—From Gladeville Junction to Norton, Va., 2 miles.

Virginia & Southern Railroad.—Sugar Grove, Va., to Woodmont, about 5 miles.

Virginia Anthracite Coal & Railway Co.—From Merrimac mines to Blacksburg, Va., 3.52 miles.

Wadley & Mount Vernon Railroad.—Douglas to Willacoochee, Ga., 17 miles.

Ware's Shoals Railroad.—Ware's Junction to Ware's Shoals, S. C., 5 miles.

Washington & Choctaw Railroad (E. W. Gates Lumber Co.) — Near Yellow Pine, Ala., 1 mile.

Washington, Arlington & Falls Church Railway (Electric).—Extension to Fairfax Court House, Va., 10 miles.

Western Maryland Railroad. — Tidewater extension at Baltimore, 6.25 miles; on Cumberland extension, 9.7 miles; total, 15.95 miles. For 1905, on Cumberland extension, 50 miles.

Wichita Valley Railway. — Wichita Falls, Texas, to Byers, Texas, on the Red river, 22.5 miles.

Williamsville, Greenville & St. Louis Railway.—Near Greenville, Mo., 6 miles.

Winifrede Railroad. — Winifrede, W. Va., to Coopersville, W. Va., 3.5 miles.

Reducing Fire Risk in Building.

Voigtmann & Co., manufacturers of iron and copper window frames and sashes, Chicago, Ill., write to the Manufacturers' Record as follows:

"During the past summer there has been a disinclination among owners to proceed with the execution of plans that have been prepared for extensive buildings in many locations, not for any good reason that they have been able to express, but evidently only because it has come to be an understood thing that building operations must be delayed during the year in which occurs a presidential election. This condition does not point to business lost, but only to trade deferred. During the past six weeks the inquiry for work in our line has been steadily growing, rush orders are coming in at a rate that is taxing our capacity, and for more than a month we have been working overtime in an effort to make quick deliveries as an accommodation to those who are handling delayed work and who are anxious to inclose their buildings before the very cold or wet weather sets in.

"The present condition throughout the country—our business is established in every thickly-built-up city—as reported by our agents, promises an amount of building for 1905 that will fairly eclipse anything that has been known. The demands of general trade have compelled the erection of a greater proportion of high buildings than ever before, and this necessity will be augmented in the future. Those exploiting such projects have been educated regarding the value of so constructing their buildings as to secure advantageous insurance ratings, and have had their eyes opened to the fact that the disorganization caused by a fire is a greater expense than can ever be covered by an insurance, and so incline to safeguard their investments in every possible way. As far as our knowledge extends, there have been but few buildings of any importance erected during the past two years or more without a close scrutiny and criticism of the plans being invited from the underwriter who is to carry the risk previous to acceptance of the specifications. We know of one firm who left all such matters to their architects, who are better draughtsmen than they are insurance engineers, and who, on account of the omission of certain inexpensive alterations in the plans that would have made the building comply with underwriters' requirements, are now paying 60 cents excess insurance rate on their building and a proportionate amount of increase on the contents. Such instances are always well advertised, and those who hear of them are not slow to profit by them; therefore each instance of a similar character only makes for an improvement in the business of those prepared to supply such work as is necessary for a reduction of cost of maintenance."

A YEAR'S WORK FOR SOUTHERN IMMIGRATION.

In the midst of the business of carrying would-be homeseekers to desirable localities and of locating actual settlers a number of the industrial and immigration agents of Southern railroads have found time to contribute to this week's issue of the Manufacturers' Record some details about their methods and facts about results. A pioneer in this work is the Southern Railway, which is experiencing the cumulative effect of coteries of satisfied settlers adding their testimony to the demand in the South for more people. It has taken years to create such a situation, which Mr. M. V. Richards well describes in the statement that he is in active touch at the present moment with 35,000 negotiations in a more or less completed state, ranging from a search for a "home acre" to locations for great industrial plants. This cumulative effect is what Capt. J. F. Merry of the Illinois Central Railroad calls his "line upon line and precept upon precept," and in the bird's-eye view of the results of the year's operation in the territory served by his line he includes 1200 Italians settled in Tennessee, Mississippi and Louisiana, about 60 per cent. of whom have gone to cities and towns, the rest being engaged in growing cotton, vegetables and small fruits; the location of a colony of Danes in Mississippi; of 64 Hungarian families in Louisiana, each bringing with them from \$300 to \$600 in cash and buying from 20 to 60 acres of land for truck farms; of a German colony in Mississippi and a Swedish colony in Louisiana. Persistent work has been done in advertising Virginia in other States, and Mr. F. H. LaBaume of the Norfolk & Western Railway notes a steady increase in the number of homeseekers, 40 or 50 per cent. of whom have purchased farms, and nearly all the others have declared their purpose to come to Virginia as soon as they can dispose of their holdings in the North. The settlers, too, have written to their former neighbors advising them to sell out and come to Virginia, and these volunteer missionary labors are expected to bear rich fruit. Mr. Frank Y. Anderson of the Alabama Great Southern Railroad reports that in addition to locating several companies to engage in coal mining and lumbering, he has sold farm lands to 198 families and has leased 472 tracts of land to parties who prefer to raise a crop and test the soil and climate before purchasing. The Frisco system, according to the estimate of Mr. S. H. Hughes, has carried into the Southwest 8132 homeseekers, and has located, as a result of the first trip, 1508, who have purchased 164,007 acres, representing an investment of more than \$1,373,000, the settlers coming principally from the Middle West and Northwest. The Missouri, Kansas & Texas Railway Co. of Texas has a record of many hundred families settled along this line, as well as a large number of new manufacturing and business enterprises established. The letters in full follow:

Returns From Advertisement.

F. H. LaBaume, agricultural and industrial agent Norfolk & Western Railway, Roanoke, Va.: On January 1, 1904, I had a conference with the officials of this road relative to the rapid industrial and agricultural development of the territory lying adjacent to the Norfolk & Western, and as a result of this conference it was deemed advisable to increase the scope of this department and offer larger facility to the prospective investor and homeseeker who was desirous of locating in this section. The department was reorganized with Mr. Paul Scherer as chief and myself as assistant. The office force

was also increased to properly handle the rapidly-increasing business along this line. The main object at first was to place before the farmers and homeseekers of the North and Northwest our wonderfully great advantages and inducements in the way of cheap lands in old, developed sections, where the climate, excellent shipping facilities, good markets and low-priced farms all combined to offer advantages which could not be secured elsewhere. Through the medium of aggressive advertising and correspondence, and with the assistance of numerous real estate men in the different localities, we have been able to arouse a very widespread interest in the North and Northwest with regard to our farming properties in Virginia. The main features we have endeavored to impress upon the Northern agriculturist are that we have good and productive lands at from \$5 per acre and up, with improvements, in old, settled communities, with excellent church, school and social advantages, highest markets close in, low freight rates and cheap labor, diversity of crops and unfailing rainfall, a climate that cannot be surpassed anywhere, and a fine quality of water, largely lithia, for domestic purposes. For the first few months our returns—as was to be expected—were not very great, although every semimonthly excursion brought in a dozen or more homeseekers. As the fall months approached the numbers increased until on one of our recent excursions we had 45 or 50, and on the last one an equal number. A large number of these settlers—say, 40 or 50 per cent.—purchased farms, and the remainder, almost without exception, have signified their intention of coming down again and purchasing as soon as they can dispose of their property in the North. Furthermore, every settler that we have secured is, to the best of my knowledge, thoroughly pleased with the change, and we are getting a large number of letters daily from Northern people to whom these settlers have written advising them to sell out and come down and locate. We feel that every settler has done a considerable amount of missionary work, and as you will readily realize, immigration into a new territory depends largely on the satisfaction of the initial settlers, who write their friends and their friends write others, and in this way the work rapidly increases along the lines of an endless chain. I have had very large experience on a number of Western roads, and I firmly believe that Virginia offers today advantages to the homeseeker and settler of limited means that can be secured in few other sections of our country. In other words, a settler comes to Virginia at the present time and pays a nominal price for the improvements on these old farms and plantations, and gets the land practically free. In fact, I know of numerous instances where Northern farmers have come in and purchased farms for less than the improvements alone could be duplicated for, and the only thing that is necessary is an intelligent knowledge of modern methods of cultivation, a little reserve capital and a willingness to take off their coats, roll up their sleeves and go to work to accomplish results which can be obtained with less personal effort, without the handicaps of long winter seasons and great distances from the markets that are found in the more or less isolated sections of the West and Northwest. We endeavor to inculcate a system of absolute business integrity and fairness on the part of our real estate men, and to offer to the prospective homeseeker every advantage and

protection, with a view of insuring them the best facilities in locating and to convince them after they have located that they have made a desirable change and are in a position to secure better returns from their investment, to say nothing of better climate and other conditions, than they were able to command in their old homes. This department is now issuing a concise and attractive booklet relative to the wonderful industrial, mining and timber resources of our territory, and as these resources are very largely in a virgin state and many of them remarkably rich, we hope during the coming year to be able to interest considerable outside capital in the development thereof. In the mineral line we have large deposits of iron ore, limestone (both hydraulic and commercial), kaolin and other clays, asbestos, mica, barytes, copper, lead and zinc, and to a large extent a great many of these original deposits still remain to be developed on a large commercial scale. Our territory also abounds in all sections with very excellent water-powers, running from a few horse-power up into the thousands, and the majority of these still remain as yet in an undeveloped state. Our coal deposits, as is well known, have been highly developed, and the quality of the fuel mined cannot be excelled in any other section of the country. Notwithstanding the great development in this line, we still have large areas available for development, and these areas are being rapidly exploited and opened up, and as soon as the output justifies, are being made accessible to our line by the construction of new branches and the extension of others already in operation. We feel that a great future is in store for Old Virginia, and are glad to advise that the other Southeastern roads, as well as the Virginia State board of agriculture, take the same view of this matter and are making liberal appropriations for the exploitation and development of this section both industrially and agriculturally. In a general way, will state that we have been instrumental in locating a large number of farmers in our territory during the past year. We have also interested a considerable number of investors and capitalists in our industrial and mineral fields, and have located not a few minor industries and smaller plants in the territory tributary to our line. It always requires some time after the establishment of a department of this kind to properly gather and present to outsiders the numerous mineral and industrial openings in a territory as large as ours. We feel we now have this data complete, in shape for attractive presentation, and anticipate during the coming year a largely increased and widespread attention relative to the same. We expect to go into the trade journals to a larger extent relative to these inducements, and have no doubt that as soon as the Northern investing public is more conversant with these attractive openings we will then be assured of a larger influx of capital and labor into this attractive field.

Working on 35,000.

M. V. Richards, land and industrial agent Southern Railway Co., Washington, D. C.: We have undertaken in the January issue of our publication, the Southern Field, to set forth the status of the Southern Railway territory as clearly as available statistics at the present time will permit. To state our views to the Manufacturers' Record on the situation in the South would involve retracing much of the ground covered in the article referred to, and so I am sending you advance sheets of the publication, trusting that you will find portions of it suitable to your purpose. This, however, does not cover your inquiry respecting the partici-

pation of the Southern Railway in the work accomplished. In the land and industrial department at the present moment our live files number 35,000, by which I mean to say that we are in active touch with 35,000 negotiations or transactions in a more or less completed state and of varying importance. They range from a search for a "home acre" to locations for great industrial plants, and to pursue each to a conclusion imposes a burden exceedingly complex, but at the same time highly gratifying to us. It is distinctly noticeable in the relations of the Southern Railway with Northern and Western people that the South is less on the defensive; that is to say, less missionary work is required to interest and convince settler and investor than formerly, and this means that our negotiations are being brought to their conclusion with greater celerity. By this time we think it should be plain to the general observer of conditions in the South that the policy of planting small nuclei of settlers at widely-separated points—a policy observed, at least as far as the Southern Railway has been able to influence the movement—has had a wholesome, leavening influence upon the entire situation. The cumulative effect of coteries of satisfied settlers adding their solicitation to the cry for more population is reaching wonderful proportions, almost unsignaled, so quietly has the change been going on—a new family here, another over there, but not generally in masses that the public would take cognizance of. The "solid trainload" of settlers has been singularly absent in the territory traversed by the Southern Railway lines, but the settler is there, just the same, and his presence may be read in his performance on the farm and in the factory in any frank statistical comparison made between the South and other sections of the country.

More Than 1000 Settlers.

Frank Y. Anderson, land commissioner Alabama Great Southern Railroad, Birmingham, Ala.: I have sold in Alabama during the year coal lands to and located seven companies organized for the purpose of mining and developing this mineral, most of whom are now at work; also a tract of land to a company for the development of red ore, and who are already mining large quantities each day. I have also sold several tracts of timber lands to companies who intend to locate saw-mills to utilize the same. Four of the companies above named, who are developing and mining coal, come from other States, two of them from Pennsylvania. I have also sold lands for farming purposes to 198 families, about 50 per cent. of whom are from States north of the Ohio river. I have also leased 472 tracts of land to parties, most of whom are from States in the North and West, who prefer to raise a crop and test the soil and climate in a practical way before purchasing, and in order to encourage them in this line we lease land, at a low rental, to the parties so they can experiment for themselves. The number of leases this year is much less than in former years, for settlers are beginning to know more about Alabama and do not require an experiment before locating. Some three years ago our leases ran to over 1000 tracts during the year. Two years ago they dropped to 800, and last year to a little over 600, thus showing that settlers are becoming more and more acquainted with the value of our soil and climate and with the experience which other settlers have had in this section of the country, and do not require to wait a year by leasing land in order to find out whether they will be satisfied with the same or not. To those who wish to locate farms

we sell for one-fourth cash, the balance payable in one, two and three years, thus enabling a settler to come here and with a limited amount of money acquire a home, which he readily can do, as the timber which he can cut off the land will more than pay the purchase price; and as our summers are long and winters short, and as very little of the crops have to be fed to keep his stock, as most of them live on the ranges during the winter, and as he can raise two crops a year, it does not take long for an industrious man to surround himself with comfort and have a reasonable bank account. For climate, soil, water and health Alabama, in my opinion, is unsurpassed.

Good Seed Cast Upon Fertile Ground.

J. F. Merry, assistant general passenger agent Illinois Central Railroad, Dubuque, Iowa: The year 1904 will be remembered by those interested in the South as being the most memorable in its history from the standpoint of agricultural development. The passenger department of the Illinois Central Railroad Co. for more than 20 years has been engaged in presenting to the people of the North and Northwest the agricultural possibilities of the States of Kentucky, Tennessee, Mississippi and Louisiana. "Line upon line and precept upon precept" has been the rule. Every year a few families have been convinced of the unusual opportunities for making homes in the South, and leaving behind the friends and associations of years, have packed their household belongings and today are located in some one of the Southern States mentioned. During the past year the facts relative to the South and its possibilities have really taken hold of the people of the North, resulting in much larger movement than ever before, particularly to the States of Tennessee, Mississippi and Louisiana, in which this company is directly and intimately connected. We are now beginning to feel that the "good seed" which we have been sowing for the past 20 years has not been upon "stony ground." The results this year have been gratifying not only to this company, but, judging from expressions which come to us, they are very satisfactory to the Southern people themselves, who are realizing the advantages of this increased population from the Northern States. In making a trip from Fulton, Ky., to New Orleans one's attention is drawn to the unmistakable evidences of greater activity among the farmers. Many new homes have been and are being constructed, and even "red barns," so characteristic of Illinois and Iowa, may now be seen from the car window. One other encouraging and noticeable feature is the larger investments being made by Northern capitalists in Southern lands, both in the Mississippi delta and along the main line of the Illinois Central Railroad, within the past 90 days. This is a further indication that the number of actual settlers who moved to our territory in 1904 will be largely increased during the year 1905. The writer accompanied and had in charge a "Real Estate Agents' and Homeseekers' Excursion," consisting of 175 men, which moved over this company's lines in the South during the month of November of this year, and while en route had the satisfaction of noting a number of real estate transactions involving thousands of acres of lands and hundreds of thousands of dollars. The millions of acres of undeveloped, cultivable lands in Mississippi and Louisiana are now upon the market at prices below their real value. With money plenty and cheap throughout the country, with a better knowledge of the earning capacity of Southern lands by Northern capitalists, and with the general feeling that the construction of the

Panama canal, with New Orleans as the natural gateway, will confer the greatest industrial, agricultural and commercial benefits upon the Mississippi valley territory, there cannot be any question as to the development of the States of the South, and especially, as we think, of the States of Tennessee, Mississippi and Louisiana. There is another very potent agency working for the development of these States. I refer to the matter of foreign immigration, which this company has been actively encouraging during the past year. Since May of this year upwards of 1200 Italians have been located at points on and adjacent to the Illinois Central and Yazoo & Mississippi Valley railroads in the States of Tennessee, Mississippi and Louisiana. So far as we have been able to determine, 60 per cent. of these have located in the cities and towns, the other 40 per cent. being engaged in growing cotton, strawberries and vegetables; and what astonishes the "oldest inhabitant" is the fact that these people adapt themselves at once to the growing of cotton, and as cotton-pickers excel all others. Marvellous, and at the same time truthful, tales are told of what they earn in a single year. I know of my own knowledge that they are not only prosperous, but are also contented and happy. Within the past year we have located a colony of Danes in Mississippi who are among the most enterprising people to be found in any country. They naturally incline to dairying, as that is one of the principal industries of Denmark. They are judges of cows, and among their first purchases after locating is a good thoroughbred or high-grade cow. At a point in Louisiana 64 Hungarian families have located within the past four months. They brought with them from \$300 to \$600 each in money and made individual purchases of from 20 to 60 acres of land and are opening up truck farms, the early products of which will be shipped to Northern markets. A German colony has also been started in Mississippi and a Swedish colony in Louisiana, and both of them promise great success and will be receiving additions to their numbers during the year 1905 both from their native lands and from congested colonies in the cities of the United States. This is only a bird's-eye view, so to speak, of what has been accomplished during the year 1904 and what may reasonably be expected in the way of immigration and Southern development during the year 1905.

Personal Stories of Success.

E. W. LaBeaume, general passenger agent St. Louis Southwestern Railway Co., St. Louis, Mo.: Advertising a railroad, its advantages and the advantages and resources of the country it traverses is not essentially different from advertising any other business. There is always plenty of business for a concern with an article of merit if that concern will keep the people who use or need the article thoroughly informed all the time of where and how this article can be obtained. There are two factors in all successful advertising—information and argument. In some cases information only is needed, but sometimes advertising must contain not only information, but argument, to convince the reader of the merit of the article advertised. The mere information concerning the productiveness of the soil, the advantages of climate and the very reasonable and sometimes very low price of lands in the Southwest has been the prime and about the only necessity in turning a great stream of farmers and investors to that section in the last five years. Now this is not as simple as it may appear. It is an easy thing to distribute information, but quite another and much more difficult thing to get the public

to absorb it, especially if the article is not an urgent daily necessity. In the plan to induce people to go to the Southwest, the Cotton Belt, in common with other roads, distributed hundreds of thousands of prospectuses which included general information of climate, price of lands, crops raised, mineral resources and all the things usually told in such brochures. These things, of course, always have some effect. Somebody will always read anything that is put out, and the results of the pamphlets were not at all unsuccessful. Various other methods were employed. Every road touching the Southwest has been advertising it almost constantly for five years. But the immigration that began to be felt in taxing train service, in the increase of freights and the bouncing up of the total of products was not felt until we began to print in the newspapers and magazines stories of personal success in that section. If a paper in Missouri, Illinois, Indiana, Ohio, Virginia or Maryland prints the record of success that a former citizen of one of these States had made in the Southwest, some of his neighbors and acquaintances are going to see it and tell others. The facts in such cases printed and distributed assiduously soon worked up a chain of discussion. Then came the call for the pamphlets and prospectuses and the movement to the Southwest that has almost amounted to a rush in the last year. It has been only necessary to get the facts about the possibilities of the Southwest to the attention of the people who could better themselves by going there to accomplish the wonderful results of the last three years, in which time hundreds of thousands have been added to the population and millions to the wealth of Louisiana, Arkansas, Southeast Missouri, Texas, Oklahoma and Indian Territory.

Tremendous Increase in Acreage.

T. L. Peeler, industrial agent the Missouri, Kansas & Texas Railway Co. of Texas, Dallas, Texas: The preliminary account of the immigration business done in the West and Southwest by the Missouri, Kansas & Texas Railway system during the year 1904 shows very remarkable and satisfactory results, both to our company and the territory traversed by its lines. During the past year we have offered to immigrants and homeseekers very low rates for the purpose of enabling people in the thickly-populated States of the East and Middle West to see for themselves the vast opportunities offered in the Great Southwest, as the territory traversed by our lines is geographically known. We have had in effect on two days in each month during the year what are termed "homeseekers' rates" or round-trip rates of one fare plus \$2 for tickets, permitting a trip of 21 days and permitting stopovers at pleasure practically for the entire time of the limit, so that every section could be visited without extra cost and intending settlers be free to locate wherever they in their opinion could be most satisfactorily accommodated. During the past year we have handled on these homeseekers' excursions through our St. Louis, Hannibal and Kansas City gateways approximately 1350 passengers per month, and our record shows that approximately 35 per cent. of this number of passengers on homeseekers' tickets have either located at points on our line or have purchased property in the territory contiguous thereto, or become interested in business enterprises in which we as a common carrier have a direct interest. We have during the year distributed from the agencies of the company not less than one-half million copies of 20 publications (books and pamphlets) which we have issued in the interest of immigration to Kansas, Indian Territory, Oklahoma and Texas, which

States and Territories are traversed by our lines. For the work in this department we have to show a large number of new business enterprises, many of which are greatly needed by our people in the way of manufacturing establishments to use up on the ground our raw materials without extra expense of handling, among which may be mentioned cotton mills, cottonseed-oil mills, pickle and preserving works, furniture and box factories, rolling mills, brick plants and numerous small plants which at the present time turn raw products into manufactured articles for home consumption only, but in this respect keep at home a considerable lot of capital which is readily invested in new home enterprises. On our line during the past year there has been a tremendous increase in the acreage of farms devoted to fruit, truck and potato growing, and the increase in this acreage over 1903 has been approximately 65 per cent. In the spring of 1905 the people on our line expect to grow a large crop of truck and potatoes, and from present indications the acreage in potatoes will be more than 200 per cent. larger than the past year, if seed are available at reasonable prices. During 1904 prices for fruit, truck and potatoes were well maintained, owing considerably to the fact that we did all in our power to aid growers to advertise their products, or, in other words, to secure buyers for growers in the new growing districts. We have, as well as the growers, learned that the market is practically unlimited for our early Texas products, the only requirement being to fully advertise what we have to sell among buyers and consumers, and this department proposes, as far as it lies in its power to do so, to advertise the fact that we will have large crops to sell next year with people who will buy or consume such products. Experience has taught me that our people will continue to increase their acreage of spring crops as long as they see a possibility of selling same at remunerative prices. Our management realizes this condition, and has for several years paid special attention to this feature of revenue development. While there has been a great development in our territory, not only in the ordinary and accustomed lines of commerce and agriculture, but in many new lines, there is yet a vast opportunity for many more people, many more industries and the absorption of an enormous capital yet to come. The people in this territory are very favorable to the influx of new people and new capital, and welcome them at all points. They also appreciate each year more and more the work the railroad companies are doing to aid in the upbuilding of this magnificent territory.

8000 Homeseekers in Seven Months.

S. H. Hughes, general immigration agent Frisco system, St. Louis, Mo.: Since the organization of what is known as the Frisco System Land and Immigration Association, about two years ago, the personnel has improved materially, and we have today 565 active members, consisting of real estate men, bankers and clergy, located in 22 States and Territories. As a result of the efforts of these men I hand you herewith the following figures, covering a period from May to November, inclusive, of this year:

Number of homeseekers taken into the territory.....	8,132
Number located on first trip.....	1,508
Approximate ticket revenue accruing to the railroad for passenger haul.....	\$128,946 00
Amount of money invested in lands.....	\$1,373,276 90
Number of acres sold.....	164,007

The above figures represent the number of people taken into the Southwestern territory on homeseekers' dates the first and third Tuesdays of each month, and does not include the regular flow of every-

day travel. The amount of revenue for the ticket haul is nominal as compared with results yet to come from the farmer located along our lines as a producer. It is estimated that the average farmer located along the lines of our system is worth approximately \$300 a year, and is an asset to the railroad to that extent, approximately this being based on revenue from freight shipments and the handling of farm implements, the products of the farm, passenger fares, etc. We consider this estimate very conservative, inasmuch as one prominent trunk line covering Eastern territory value their average farmer at \$1000 per annum. Thus it is readily seen the importance of locating as many farmers as possible on the unoccupied lands in the Southwest. The people going into Frisco system territory during the past two years have originated principally in Illinois, Indiana, Ohio, Kentucky, Pennsylvania, Western New York, Michigan, Wisconsin, Minnesota, Iowa, Kansas, Nebraska, North Missouri and Tennessee. Southwest Missouri, and Southeast Missouri, Arkansas, Oklahoma, Indian Territory, Kansas and Texas have each enjoyed a share of this immigration. A great many of these people have engaged in general farming; others, desiring to specialize in certain lines, have taken up horticulture and mineral in Missouri and Arkansas, some in stock-raising in Oklahoma, Indian Territory, Kansas and Texas, and special mention might be made of the wonderful mineral upheaval in Kansas and Indian Territory: particularly is this true of oil, gas and coal. All eyes are now on Oklahoma and Indian Territory in anticipation of the two Territories uniting for statehood. The Senate having made a favorable report on the proposition, it is the consensus of opinion that Congress will pass the bill in the near future, and statehood will be inaugurated with the population of a million people who are from all over the United States and are of an up-to-date, energetic class. A great rush of people is expected to this section in the near future in anticipation of statehood. Speaking from an industrial standpoint, the conditions in the Indian Territory and Kansas are very favorable, and the people throughout the oil and gas belts of Indiana and Ohio have been recently turning their attention to this section, inasmuch as oil and gas have become exhausted in Indiana and Ohio, and as the new country appears to have plenty of coal in case the oil and gas should run out, the manufacturers feel confident of their safety in establishing their plants in the new country. The question of foreign immigration is now being taken up, with bright prospects of placing many Germans, Swiss, Swedes, Hollanders and Italians from the north of Italy into the territory of the Southwest. Texas has startled the world by its recent development in the growing of rice and truck gardening. During the month of July representatives of foreign nations representing the World's Fair at St. Louis were taken to Texas with a view of receiving their indorsement of that section. They were taken there as the guests of the Frisco system under the direction of the immigration department, and after a 10-day sojourn in the State they returned to St. Louis and gave Texas a splendid indorsement, recommending the same to their governments in the highest terms, and it is expected good results will follow later. Baron Matsuidaira and a number of other influential Japanese citizens have visited Texas during the current year at the solicitation of the Frisco system and through its immigration department in order that they might investigate South Texas as a rice proposition. This indorsement they have given, and the

baron makes the statement that in his opinion the two best countries in the world for producing rice are Texas and the Yang-tsi-Kiang valley of China, and he has returned to Japan with the determination to interest Japanese capital in the rice section of Texas. Since the advent of the St. Louis, Brownsville & Mexico Railway, which has been finished during the current year and promoted by Mr. B. F. Yoakum and his associates, great interest has been manifested in that section of South Texas lying between Corpus Christi and Brownsville, tributary to the above-named line, by reason of its adaptability in the growing of truck such as onions, tomatoes, cabbage, sugar beets and all tropical fruits which can be grown in Southern California or Florida. A market has been found for these products, and while there are millions of acres of unoccupied lands along the Brownsville line, it is expected that within the next few years this country will be thickly set-

tled, inasmuch as they have the soil, which is of a black sandy loam, and at the present time they have about 200 artesian wells lying between Robstown and Brownsville at a depth of about 650 feet. Heretofore this vast expanse of country has been used as a cattle ranch, covered with mesquite and sage brush. The first artesian well was brought in about six years ago, and the same is still flowing.

Looking After Individual Homeseekers.

G. A. Park, general immigration and industrial agent Louisville & Nashville Railroad Co., Louisville, Ky.: I continue along the same lines as advised you some time since and am meeting with reasonable success in directing immigration to that section of the Southland which our rails traverse. At present we are so very busy looking after the homeseeker personally and corresponding with him, which with a very small force would prevent us from getting up a letter for publication.

WORK OF COMMERCIAL BODIES.

Striving With Success for Development of Agricultural and Manufacturing Resources.

Complementary to the work of the railroads spreading abroad knowledge of the wonderful potentialities of the South and seeing to it that incomers from other parts of the country and from abroad find suitable locations, have been the efforts of industrial leagues, business men's associations and like organizations to attract industrial capital or to bring into the productive market conveniently-located lands. Typical of the work accomplished are the building of a belt-line railroad and a steel bridge and the establishment of seven industries, representing an investment of more than \$1,000,000 and the employment of 1500 people at Clarksburg, W. Va.: the location of 20 industries, with an aggregate gross capital of \$65,000,000, at Memphis, Tenn.; the listing of several hundred thousand acres of unimproved farm and timber lands and the advertising of them in the North and Northwest and the actual bringing to the neighborhood of Shreveport, La., of 20 families who purchased from 10,000 to 15,000 acres of land, and the encouragement of truck-growing and fruit-growing near Calvert, Texas, and the establishment there of a cannery with a capacity of not less than 20,000 cans a day. One club in Kentucky succeeded within one year in bringing about the construction of a standard-gauge railroad 10½ miles long, connecting the town with a trunk line, and is now prepared to display the same spirit in the encouragement of new industries. Letters describing these movements follow:

Ready for New People.

F. G. Terry, president Commercial Club, Cadiz, Ky.: We have nothing to report of value along the line of encouraging immigration. Having other matters which we deemed a necessary precedent, we hope to do something in the near future. Our town was without railroad facilities and no prospect of securing them. The Commercial Club of Cadiz was organized to do something in that line. It succeeded in getting the minds of the people of the town centered on that object, and within a year of its organization saw their efforts crowned with success. The people subscribed for the stock, paid their money and now own 10½ miles of standard-gauge road connecting at Gracey with the Louisville & Nashville and the Illinois Central system of roads. They own two locomotives, all the cars they need, and owe for their rails. The roadbed is in excellent condition, and is making fixed charges and laying in a little reserve fund. The advent of the road has opened up avenues and lines of travel to our town not

dreamed of by the average citizen, and newer and better things are in store for us. This town (1200 inhabitants) needs a broom factory, a wheelbarrow factory, a canning factory, etc. The mass of our people being agriculturists, have not the "get up and snap" about them to go into manufactories. The town has a good water system, ice plant, schools, churches, and, generally speaking, as good or better lot of business houses and dwellings than are usually found in country towns. Our club will be glad to furnish any information desired by interested inquirers, and especially so for road builders, to which subject we are now turning our attention. The farmers of this section have one of the largest and the best and most useful crops of tobacco ever raised in the county.

Domiciled Twenty Families.

A. R. Holcombe, secretary-manager Shreveport Progressive League, Shreveport, La.: The underlying purpose in the organization of the Shreveport Progressive League was to establish some responsible body which should undertake the work of settling up this section of the country with industrious white farmers. For almost 100 years cotton and corn had been about the only products of this section. It was a natural consequent that land values should have been fixed by the adaptability of the soil for raising these products. Hence it came about that the Red river valley lands, being suitable for raising cotton and corn, were worth large sums of money, while the uplands, not being suitable for such purposes, were a drug on the market. A few pioneers demonstrated the fact that fruit, truck, etc., could be profitably raised on the uplands, and that the climate was well adapted to raising live-stock, poultry, etc. This is where the work of the Progressive League began. It had the owners of improved and unimproved farms, timber lands and lands which had been cut over list their properties with the league for the purpose of selling them to homeseekers and investors. Several hundred thousand acres of land were thus placed on the market and were advertised extensively in the farming districts of the North and Northwest. Inquiries soon flowed in, and in a short while it was seen that the section was coming into favor. Homeseekers came to see and remained to raise peaches, grapes, pears, plums, apricots, poultry, live-stock, truck, etc. In the 10 months since its organization the league has sold between 10,000 and 15,000 acres of land to about 20 families who are now domiciled near Shreveport. This is the beginning of much greater things. Along with

its immigration work the league has been using its best endeavors to secure the location of factories in Shreveport, it being believed that with 11 railroad lines and the Red river this city would prove an advantageous site for factories of many kinds. Two factories were located through the league's efforts. One of them, the Queen City Furniture & Manufacturing Co., Ltd., has been in operation for more than four months. It has a capital of \$75,000, and it is believed that a dividend of not less than 30 per cent. will be paid at the end of the first 12 months. The other factory located is the Virginia-Carolina Chemical Co., a corporation which intends to manufacture fertilizer. Its capital is \$300,000. A site has been purchased, but the factory will not be in operation until next season. The league is also acting as a general information bureau and undertakes some kinds of civic duties, such as inviting and caring for conventions and the like. It is made up of the wealthiest and most prosperous business men of this city and section.

Organized for Work.

J. F. Hooper, president Commercial and Industrial Association, Selma, Ala.: The Commercial and Industrial Association of this place has during the years of its existence not yet made any efforts towards inducing white immigrants from other parts of the country to move to this place. We are therefore not prepared to give you any account of what this organization has done in this matter; but there has been formed a new immigration committee, consisting of the most influential citizens of this place, and it is their aim to push this matter, and perhaps later on will be in the position to send you something for publication.

Expecting 30,000 Population.

Anthony Bowen, secretary and general manager Clarksburg Industrial Co., Clarksburg, W. Va.: The Clarksburg Industrial Co., acting for this city in lieu of a board of trade, feels that its efforts put forth in behalf of the industrial development of this section has met with signal success. These efforts have been assisted by an active citizenship and the hearty co-operation of the Baltimore & Ohio Railroad Co., which is liberal in its attitude to all its towns and cities in this State and is doing much to push the material development of our natural resources. Clarksburg is most favorably situated in the coal and natural-gas belt of West Virginia, and is known as "The fuel city of the fuel State." Her cheap fuel, excellent railroad facilities and free manufacturing sites have brought many industries here in the past year. From a railroad standpoint Clarksburg is perhaps better located than any other city in the State. It is the gateway for all the varied products of the State through the great Baltimore & Ohio Railroad system. From this city lines of railway diverge in all directions, and two corps of engineers are now making the final survey for a line up Elk creek to a connection with the West Virginia Central Railroad. Within the last year the Clarksburg Industrial Co. has built and caused to be located the following enterprises: An industrial railroad, in the nature of a belt line, to open up manufacturing sites; a steel bridge, the largest of its kind in the State; the Industrial Window-Glass Plant, the A. Radford Pottery, the Colonial Chair Factory, the Opalescent Glass Works, the Grasselli Chemical Works, the National Carbon Plant and the Clarksburg Hard-wall Plaster Factory. In these enterprises over \$1,000,000 has been expended, and their combined labor capacity, when fully equipped, will be fully 1500 laborers. Our prospects for new business in the year 1905 seem to be better than at any

time in our history. Already many applications have been made for sites. We are liberal to our manufacturing enterprises locating here. We grant a free site, the cheapest and most abundant gas and coal for fuel in the world, and a freight rate equal to any city in the State. The general manager of one of our largest institutions makes the prediction that Clarksburg will have 30,000 people in three years. This will mean to double our present population. It is probable that with the extraordinary inducements offered to manufacturers by this city that the growth may be much more than that.

Opening Up New Lands.

Theo. W. Gulick, secretary Commercial Club, Muskogee, I. T.: The Commercial Club of Muskogee has accomplished much within the past year that has tended to the development of the Creek Nation and the prosperity of Muskogee. The two most notable instances of this character and the most far-reaching in their ultimate results were the removal of restrictions on the lands of the Creek freedmen and the securing of \$100,000 from Congress for school for white children in the Indian Territory. The Muskogee Commercial Club initiated both of these movements and was successful in both. Through the removal of the restrictions thousands of acres of land was placed on the market and bought by the best class of farmers from all sections of the United States. Through the efforts of the club scores of truck farmers have been located in this section who can send their products to the markets of Kansas City, a distance of 300 miles, weeks before the local growers can market their stuff. Many fine stock growers have also been located here by the club, either directly or indirectly, and there is room for a greater development in this direction, as the climate is ideal and the comparative economy in the raising of cattle in this country is very great inducement to fine stock raising. The club has inaugurated movements for the diversity of farming and the raising of fruits of all kinds.

For Muskogee specially the Commercial Club has done a great work. In the past year, through its efforts, the Midland Valley Railway has built a line running from the timber regions of Arkansas and the coal fields of the Indian Territory through Muskogee and on to Wichita, Kan. The club has secured the division point of the above road for this city, with excellent prospects for the road's shops. The location of saw-mills, planing mills and factories of all descriptions has been attended to by the club with gratifying results. A movement is now on foot to build a gas-pipe line from the northern part of the Territory. This will be an accomplished fact within the next three months, and we will then have plenty of natural gas for all purposes. With four trunk lines running through the city, making it the best distributing point in the Southwest, augmented by natural gas in abundance, the prospects for continued prosperity for Muskogee are bright. All this has been accomplished by the Commercial Club.

Twenty New Industries Located.

L. F. Peters, commissioner Memphis Industrial League, Memphis, Tenn.: The year 1904 has been the most prosperous year in the history of Memphis. The tangible results of the work of the Industrial League are shown in the locating of 20 industries, representing a gross capital of \$65,745,000, employing a large number of hands. The results of the advertising of the city through the medium of magazine articles, trade journals and the circulation of "Facts About Memphis" are shown in the immense increase of the population and in the fact that,

although there has been over 2000 residences built during the year, still the demand is far in excess of the supply. The railroads have largely increased their terminal facilities, and still there is more or less congestion owing to the increased freight movement. This will be relieved by the Union Railway (Belt Line), which has just been finished and put into commission. This belt line is about 20 miles in length and opens up a large territory for manufacturing purposes. Quite a number of large Northern manufacturers have established distributing branches in Memphis for the supply of their Southern trade. This will result ultimately in branch factories, and thus add to the industrial growth of the city. The movement for a new union depot in this city was inaugurated by this league, and is being pressed forward by a joint committee consisting of representatives of all the commercial bodies of the city and the city council. Prospects are exceedingly favorable for the success of this movement. Officials representing all of the railroads entering Memphis have met with the joint committee, and without an exception expressed their willingness to join in the movement. In order that the reader may form a correct idea of the progress during 1904, I have compiled comparative figures that will be interesting:

Clearing-House Reports.

1900.....	\$146,981,045 00
1901.....	154,482,935 75
1902.....	179,199,939 22
1903.....	214,009,558 12
1904.....	262,594,756 06
Increase 1904 over 1903,	\$48,585,197.94, or 22 per cent.

Real-Estate Transfers.

1902.....	\$4,259,290
1903.....	6,174,040
1904.....	7,835,650
Increase 1904 over 1903,	\$1,661,610, or 26 per cent.

Postoffice Receipts.

1901.....	\$247,292 94
1902.....	294,062 57
1903.....	342,120 71
1904.....	393,617 24
Increase 1904 over 1903,	\$51,496.53, or 14 per cent.

Building Improvements, City and Suburbs.

1902.....	\$2,532,000 00
1903.....	3,265,235 00
1904.....	4,594,157 69
Increase 1904 over 1903,	\$1,328,922.69, or 40 per cent.

Banking Facilities.

Nineteen banks and two trust companies (two trust companies being organized in addition.)

Capital and surplus.....	\$5,000,000
Deposits.....	30,000,000
Volume of trade 1903.....	\$300,000,000
Volume of trade 1904.....	436,000,000

Calvert on the Lookout.

H. Stricker, secretary Business League, Calvert, Texas: Throughout the South and West energy and persistency are prominent agencies in bringing about immigration and new industries, yet there are some localities, possessing the very best opportunities for investment for the progressive farmer and pushing business man, never shown in the usual method of advertising "opportunities," and among them we draw your attention to Calvert, Robertson county, Texas. A brief description: To the west of town lies the Brazos valley, noted for its cotton reputation; to the east, no better truck and fruit lands in the country. Both lands have raised but one crop—cotton only—and no lands have surpassed the success shown here until the introduction of the boll-weevil five years ago. Gradually each successive crop lessened each year, until today these lands produce but one-fifth as much as formerly, the truck and fruit lands almost totally failing to make anything, with few exceptions, while the rich Brazos lands had their crops cut in two. With each successive failure the land-owners became poorer, until today lands that could not be bought for less than \$100 can now be found for \$25, and those that were hard to get for \$20 to \$30 per acre can readily be picked up for \$6 to \$10, and all in cultivation. The writer is no land man, has no realty for sale, buys

himself from time to time as an investment; bought a fine piece of land of 160 acres one mile from the town last year for \$10 an acre and has planted most of it in fruit trees, while raising truck of all kinds to very best advantage. We are now arranging for a cannery of not less than 20,000 cans per day to can all truck, and will immediately proceed to investigate the requirements of a cane mill, these lands having proven that they produce the most satisfactory grade. There are other localities just as good as that of Calvert, but you are offered lands at from 10 to 20 times the prices that equivalent results can be obtained here. We are open to propositions from investors for any size cannery, sugar mill, cotton mill or men who want to pick up bargains in lands for the purpose of trucking, raising hogs and alfalfa or crops other than cotton; the latter they can best judge if it pays. The town of Calvert offers all modern advantages, and the writer will cheerfully answer any inquiries.

Shops Crowded With Orders.

Frederick B. Vail, sales manager American Air Compressor Works, New York, writes to the Manufacturers' Record as follows: "With us business conditions and prospects are very bright. We have been successful in keeping our shops crowded with orders throughout the entire year; in fact, during the latter part of the fall we were compelled to run our shops 24 hours a day. Since that time, while we have not received possibly as many orders, we have received splendid inquiries from all sections of the country and abroad. Of course, many contracts and orders at just this time are holding over until the first of the year. Our business is considerably affected by activity or depression in other lines, but our prospects were never brighter. We expect the coming year will be the largest and most successful in our history. The adjustments of many labor troubles, the prosperity of the farmers, the increased activity in steel and iron, the many public improvements such as the Panama canal, railroad construction and tunnels found in every section of the country, point to the most prosperous era in the history of this country. We believe the financial and mercantile institutions are keenly alive to the wonderful future of this country, this feeling being participated in and indorsed by the brains, skill and untiring energy of the whole American people."

Demand for Belting.

Wilbur C. Meier of Joseph Meier's Sons, manufacturers of pure oak-tanned leather belts, Newark, N. J., writes to the Manufacturers' Record as follows: "Numerous inquiries from all parts of the country lead us to believe that we will have an exceptionally fine business for at least six months. The last few weeks we have fitted out new flour mills, lumber mills, stove works, and are at present figuring on several new equipments of all kinds. Business is much better than for any time during last six months, and we see no reason for it not continuing so."

New Orleans and Panama.

Major B. M. Harrod of the Panama canal commission stated at New Orleans last week that in the matter of securing contracts for supplies for the canal New Orleans, because of its proximity to the Isthmus, would appear to have an advantage over other bidders, but that as proposals will be published simultaneously in all parts of the country and the contracts let to the lowest responsible bidder, it depends in a large degree upon their ability to grasp the opportunity whether the business men of New Orleans shall reap the advantage.

Reasons for New England's Industrial Growth—XI.*

[Special Correspondence Manufacturers' Record.]

Boston, Mass., December 26.

The history of labor conditions in New England and a study of the conditions that exist there today form a very interesting and instructive feature of the industrial development of that section. We have seen in the facts I have presented in previous letters how the factory system in New England was an outgrowth of the household industry which was established in the earliest colonial days, first through the necessities of the people, and next through the paternalism which from the earliest times fixed penalties and rewards for industrial production by the family. When in the close of the eighteenth century steam and power-driven machinery resulted in the establishment of the factory system and the factory town in Old England, and it was sought, in spite of prohibitive laws against the exportation of machinery, models or patterns, to introduce power machines into New England, the scarcity of labor formed a serious obstacle to the development of the factory system. In order to attract the best elements of the community to factory work, extraordinary attempts at beneficent paternalism were begun in New England very early in the effort to establish the factory system here, and with many variations and occasional fluctuations the idea continues to this day. In some communities it never has been known in vital form; in others it has seen a marked subsidence, while elsewhere it has only appeared in recent years, and in still other cases it has been uninterruptedly maintained throughout a protracted period.

The first model factory village in New England was established by Dr. David Humphreys in 1803. It was on the Naugatuck river near Derby, Conn., and was named Humphreysville. Here an attempt was made to eliminate all the objectionable features of the factory towns of England. The morals and the health of the employees were looked after, with the result that for a long time Humphreysville was an industrial paradise, and this effort is to this day regarded as responsible for much that is excellent in the factory towns of New England at this time.

The most widely-celebrated example of this form of paternalism is doubtless furnished in the case of Lowell, which was started as a factory village at a considerably later period, but in which was embodied to an unparalleled extent every admirable feature which had previously been developed. Labor was still scarce. There was no large foreign population on which to draw, and it was necessary to make the factory attractive to the daughters of New England's farmers. To do this, factory life was surrounded with every possible influence of an elevating character. The superintendents of the factories were largely members of the church and teachers in the Sunday-schools, and a great majority of the operatives were church members and scholars in the Sunday-schools. The operatives had organizations of their own, literary and otherwise, and the famous Lowell Offering was a literary publication wholly the product of the Lowell girls, one of whom afterwards became known far and wide as the beloved Lucy Larcom. Factory girls were frequently received at the social gatherings of the millowners and the "society" of the place; pride of character and an exclusiveness of respectability were dominant traits, and altogether there was a higher intelligence and a loft-

tier moral tone in Lowell than in any other factory town in the world.

In these days the factory girl would regard her factory experience as merely preparatory for household duties. She would work a few years in the factory, and then retire to assume the responsibilities of a wife, her savings going to augment the comforts available for her new home and her factory life really increasing her usefulness in her later sphere.

Not until the middle of the last century did American and English operatives begin to give way to those of other nationalities. Then the Irish famine of 1846 and 1847 and the German political troubles of 1848 started a vast emigration to America, with the result that the American operative began to decrease in numbers, and today they form a minor part of the factory population in nearly every New England factory town. Successive waves of emigration have brought evolution after evolution, until today Canadian-French, Swedes, Armenians, Greeks, Italians and Portuguese are mingled with the Americans, Irish, English and Germans who remain in factory life, the percentage of each nationality varying according to the locality and being affected by conditions peculiar to the place. Thus at New Bedford there is a population of some 12,000 Portuguese, a legacy from the old whaling days, when the Portuguese sailor became acquainted with New Bedford as he was not with any other American port, and to which he and his friends turned when the whaling business dwindled away.

There are frequent lamentations over changed conditions in New England since the days when Lowell's factory life was of so high an intellectual and moral tone, and in that respect there has doubtless been a notable falling off. But it was by no means all *couleur de rose* in those days, as records of the hard hours and forbidding conditions disclose. From daylight to dark were the factory hours, making an average for the year of 12 hours a day, and \$3.50 a week was very good pay. There were no such comforts in the factory itself as the modern mills contain, and only occasionally were the operatives' homes as attractive as are most of those of today. There were compensations, too, in the loss of the kind of operatives which once were Lowell's boast. Indeed, the New England factory has operated much as a seminary might be, graduating one "class" and starting them out on careers of usefulness in more elevated callings, and then taking another and working the same change in them. Some of the later accessions may not be so promising material as that which has been formerly treated, but that an evolution is proceeding no one can deny. The Portuguese at New Bedford are fast assimilating, and among them are leading citizens of the place, and other nationalities in varying degree give promise that more than one or two generations will hardly be required to make ambitious, patriotic American citizens. In Boston a friend told me of an Italian boy of 14, only seven years in this country, whose father was merely a day laborer, who confided to him that when he got through high school, which he would finish if his father had good luck, he proposed to go to Dartmouth. In the Hebrew north end of Boston there are night schools which adult Hebrews are attending every night, where they are acquiring their first knowledge of the English language, and for two successive years the highest honors in the public schools they attended were carried off by Hebrew boys. I am told the children of

foreign parentage attending the schools all over New England are more apt to be found thoroughly conversant with American history, especially colonial and local, than are those to the manor born. So, while there may seem to be rather an overdose of not immediately-assimilable material on hand, and in not every case may the problem ever be worked out with entire satisfaction, yet there are abundant evidences that the heaven is at work on the whole lump, and that some very excellent specimens of American citizenship are being produced from among those who are yet quite in the raw. As to the general effect of the factory on the community and the individual, there is encouragement and gratification for the South in the testimony of Carroll D. Wright, than whom no man has made a more careful and conscientious study of labor problems. "The factory," says he, "means education, enlightenment, and an intellectual development utterly impossible without it. I mean to a class of people who could not reach it in any other way. It is an element in social life. By its educational influences it is constantly lifting the people from a lower to a higher grade."

The poorer whites of the South are not underestimated by the best-informed millmen and students of New England. They are regarded as a most excellent material from which to draw for operatives, and when the inevitable evolution has occurred, and they are fitted to fill positions of more responsibility, the citizenship of the whole South will have been benefited. Then in the South, as in New England and elsewhere, there will be occasion to draw on the less enlightened and less prosperous peoples of other lands, so that an evolution will proceed till in time the dream of the poets will be realized and all the world will have been regenerated. And in this work the factory seems destined to play a quite conspicuous part.

Some of the factory owners of New England seem to feel a responsibility resting on them as the managers of really great missionary establishments, and in numerous instances they have at heart the welfare of their employees to almost as great an extent as if they were members of their own households. A conspicuous case is that of the Talbot Mills and village at North Billerica, on the Concord river, four miles from its junction with the Merrimac at Lowell. Instead of long rows of old-fashioned, low-studded, box-like mill tenements, standing close to a dusty and dirty road, here are picturesque streets and squares on which front the well-built and attractive houses of the millworkers. Surrounded by well-kept lawns, shrubbery and flowers, it is difficult to identify these as corporation tenements. Noted architects of Boston were their designers, and their distinctive character gives them the appearance of having been built in accordance with the tastes of individual owners. Prizes are given for the best-kept vines, flower and vegetable gardens, and for window and porch boxes. The village is provided with water-works and with a scientific sewerage system, by which solids are separated from liquids and utilized for fertilization. There are social organizations, a circulating library supported by the mill, and schools supported partly by the town and partly by the mill. Frederick S. Clark, treasurer of the mill, carefully studied various experiments here and abroad for bringing employer and employee in closer relations, and one of the means adopted was the system of pensioning old employees, which was inaugurated in March, 1903. It provides that after 15 years' service, in case of incapacity, or at 70 years by the operation of the age

qualification, any employee may retire on a pension which is to be based on a percentage of the average wages earned per year for the 10 years preceding retirement. The percentage is determined by the number of years of continuous service, and for 15 to 35 years is 1 per cent. for every year of service. For periods longer than 35 years it is to be 50 per cent., but no pension shall exceed \$500.

The Drapers at Hopedale also maintain a model village, it having been one of the 16 chosen by the Bureau of Labor for presentation by plans, photographs, etc., at the St. Louis Exposition. It also received honors at the last Paris Exposition, where representations were exhibited by a social science society. Here there are some 500 tenements, practically the whole town belonging to the Drapers, and to pass along the well-paved streets, as fine as any in the country, and view the landscape gardening effects, the beautiful shaded lawns, the conservatories of flowers and the handsome homes one might mistake the place for a particularly exclusive residence section of a smart city. There is a sewerage system, paid for by the Drapers, and the houses have bathtubs and all conveniences. The rent charged is hardly more than enough to keep the property in repair, but the system is considered indirectly profitable in that it assures a high class of labor and a contented class. Some workmen have bought property from the Drapers, but they do not encourage purchases, as experience has shown that owners will not keep the painting and general appearance up to the standard desired. Prizes are given for keeping lawns in shape, etc., and, on the other hand, untidiness in tenants is not tolerated; such are dispossessed. There are parks, playgrounds, libraries, churches and schools, all provided by the Drapers. Although organized under the town laws of Massachusetts, all the officers of the corporation are members of the Draper Company. The Drapers' factory is an open shop. The company does not recognize labor unions, and while it will take up and deal with any question brought up by its own men, it does not deal with outsiders. In all the years it has been in operation no labor disturbance that caused a shut-down has occurred.

Manchester, N. H., with its 65,000 population, is another example of beneficent paternalism. The Amoskeag Manufacturing Co., composed at first of Boston capitalists, started the city in 1846 as a factory town to utilize the 50-foot fall of the Merrimac. They laid out a comprehensive system of parks and symmetrical streets, and Manchester today is one of the brightest-looking factory cities in New England. The houses of the operatives are substantial and commodious brick structures, and the arrangements found for the comfort of operatives were highly commended by a committee of British workmen on a recent visit. While the company has parted with the greater portion of its real estate holdings, it still owns a large number of corporation tenements, which are kept in perfect repair and rented at low rates to operatives. There are also large and well-conducted corporation boarding-houses for unmarried operatives whose homes are elsewhere, and one of the features of the place is a boarding-house dining-room, which is frequently patronized by visitors to the mills, as it is occasionally by residents of the city. At one of the larger of these boarding-houses about 200 dinners are served each day, and for 20 cents the visitor may get a better three or four-course dinner than a country hotel would serve for 50 or 75 cents. The operatives are a well-dressed, contented and orderly

*This series of articles bearing upon New England's industry is intended as an inspiration for the South.

lot, and there has hardly been a labor disturbance in a generation. Just how close is the relationship between consideration for the employe and profits for the mill it may be difficult to determine, but while there has been much antagonism for many years between the employer and employe at Fall River, with a present proclamation that the Fall River mills can't pay prevailing wages and keep out of debt, the Amoskeag is not only running its 16 mills full time all the while, but has this year declared a 25 per cent. dividend extra, in addition to its customary 10 per cent. The original capital of the Amoskeag Manufacturing Co. was \$50,000. Now it is \$4,000,000, all of which represents profits. The company operates 320,305 spindles and 12,000 looms, and all its machinery is up-to-date, there being no hesitancy here in sending machinery to the scrap-heap as its usefulness is ended. It is estimated that there are 20,000 wageworkers of all kinds in Manchester. The Amoskeag Company employs 8000 of these. The operatives here are largely Canadian-French, with a considerable number of Swedes. The same labor evolution has occurred here as throughout New England generally.

These are given as instances. In numerous places throughout New England, as with the Knights of Providence and elsewhere, Keith of Brockton, etc., there are conspicuous and very successful efforts made to maintain harmonious relations, and the employe's condition and surroundings are made as comfortable as may be, with direct results of an advantageous nature all around.

As with physical culture, the training of a child or a savings account, the more you put in the more you are likely to get out; so the attitude of the employers and the State seems to be increasingly favorable to training schools. Boston, Springfield and Cambridge have mechanical art high schools, and Boston alone has 28 manual-training schools. Massachusetts has its schools of technology, and there are three fine textile schools in Massachusetts and one in Rhode Island, at Providence, largely due to the instigation and generosity of the manufacturers of the section. The oldest in New England is that at Lowell, and it is now housed in a splendid group of buildings, valued at \$225,000, with equipment and land valuations of \$100,000 each in addition. This and the other textile schools of Massachusetts, at New Bedford and Fall River, were established under a State law passed in 1895 providing that cities having in operation at least 450,000 spindles might organize a textile school, and on appropriating any sum up to \$25,000 for this purpose there should be appropriated a like sum from the treasury of the Commonwealth of Massachusetts. Public-spirited and philanthropic people have contributed large sums in addition, so that while the Lowell school is vastly the largest, the others represent a much greater investment than the \$50,000 provided for by State and municipal aid. In the Fall River and New Bedford schools every branch of cotton spinning, weaving and dyeing is taught, and at Lowell there is a woolen department in addition. Education is of a most practical and thorough form, and is designed not only to equip the student for positions as superintendents and other important places, but to increase the efficiency of the operative by adding to his knowledge of the craft. Every standard type of machine and loom is found in these schools, and familiarity with every part is a portion of the teaching the curriculum contains. There are day courses, in which are given thorough instruction in applied textiles, general chemistry, mechanical engineering, ad-

vanced mathematics and decorative art. The evening classes are mainly composed of operatives with limited schooling and means who require short, practical courses. Of the 120 pupils taking the regular day courses at Lowell last year, 20 were from the higher general educational schools (universities and colleges), 82 from the high schools and academies and 10 from grammar schools. The 438 pupils of the evening classes were mostly from the mills and shops of Lowell and Lawrence and vicinity, though there were those who came four evenings a week from commercial houses of Boston handling textiles. Five classes have been graduated from the Lowell school, and the graduates are well represented in the higher positions of textile manufacture and distribution as superintendents, chemists, designers, salesmen, etc., and in the national customs and purchasing bureaus, and it is declared that the demand is always ahead of the supply. It is an inspiring sight to see workmen attending these schools after a hard day's work in the mills, and to witness the enthusiasm and the determination with which they apply themselves to the various features of the instruction. While an ambition to do better and more remunerative work doubtless moves the workmen generally to attend these night classes—and, indeed, the object of the manufacturers in instigating and supporting the schools was to enable them to more rapidly and surely pass to the greater manufacture of the finer grades of goods—there are instances where sheer thirst for knowledge has prompted an operative to take a full course at whatever trouble and inconvenience. An almost pathetic case in point was related to me by Principal W. W. Crosby of the Lowell school, who told me of an old weaver of Lawrence, a man of family and of small means, and who hardly hoped for any kind of improved condition in labor or wages, who yet faithfully made the trip to and fro between Lawrence and Lowell every school night till he completed his course, when he expressed almost unbounded delight in having learned the how and why of the work he had been mechanically doing all his life.

I have dwelt on the brighter spots in the labor side of industrial New England, and they seem to be sufficiently predominant to justify an optimistic feeling, as a whole, and to present many points of interest and inspiration to the South. The main body of New England workmen and workwomen are undoubtedly an orderly, intelligent and prosperous lot, and there is at least a large proportion of employers who are considerate and humanely interested in their welfare. That there are occasional dark spots is inevitable, but except in the case of Fall River it would seem that few untoward conditions of a serious nature are to be found. While about one-third of all the mechanical and textile workers of New England are foreign-born, the foreigner, as a rule, is becoming Americanized, and they are generally good workmen, too, and the savings-banks' reports indicate the prosperity they enjoy. The South will get some of the trained operatives of New England. I have talked with some who have been in the South, liked it there and expect to return. I believe, however, that there will be no heavy immigration from New England, and that the South can best utilize the same plan that has stood New England in such good stead, namely, incite all her own people to constant activity and industry, and then rely on the foreigner in successive waves to take up the work when one class has graduated into other lines. The South has already made the beginning in a system of tech-

nical training and textile schools. In what New England is doing today there is inspiration and instruction along these lines. Indeed, the more I study conditions of every sort in investment in New England, the more persuaded I am that almost on identically parallel lines, in effect if not in degree, will the South find it to her advantage to proceed in an industrial way. It will take generations, of course, to acquire as highly skilled a general body of workers as New England contains, where the characteristics are an amazing mobility and adaptability to changed conditions and occupations; but following behind New England, at long distance in some cases, more nearly abreast in others, the South may find in New England's progress a faithful guiding star. And with such richness of resources as the South contains in iron, coal, oil, timber and innumerable other minerals, marble, stone, etc.; with agricultural capabilities which alone would make a section great, it is utterly beyond the power of the clear-visioned prophet of these times to foretell the extent of the development, prosperity and wealth the entire South will come to know.

ALBERT PHENIS.

IRON AT BIRMINGHAM.

Activity in Many Lines in the District.

[Special Cor. Manufacturers' Record.]

Birmingham, Ala., December 26.

At this season of the year the iron trade as a rule looks for a cessation of buying; but this season has been an exception to the rule, and while you can't call the demand active, it has been sufficient to hold prices very firm. It can also be said it was more than sellers could supply. There were a few orders in for round lots which were deeply pared before being accepted. One order came in for 15,000 tons, deliveries to be strung out through the first half of the coming year. It was scaled down to 3000 tons before being accepted. Another was for 3000, and that was pared down to 750 tons. The fact is it is difficult to have orders running over 500 tons accepted in their entirety; and when orders are accepted, sellers want to feel that the iron is for actual melting. It is a hard matter for the speculative element to get in.

The majority of the sales were made on the basis of \$13.75 for No. 2 foundry. A few sales at 25 cents less were made to long-time customers, and there were a few sales made on the basis of \$14 for No. 2 foundry; but these were order sales, and conditions governed price. The lots were not important, and in various amounts ranged below 500 tons. There was one lot of 300 tons of No. 3 foundry and gray forge that went to a Pittsburg buyer on basis of \$13.75 for No. 2 foundry. The order was for a large amount, but was scaled down. Gray forge was in some demand, and when it could be had brought \$12.75. Some No. 1 soft was sold at \$14.25, and a little No. 2 soft at \$13.75. There is more inquiry than demand, and sellers show a preference for the small orders. Large orders stand very little chance of being accepted in their entirety. Some buyers have been endeavoring to open the market for the second half of the coming year, but their door-knock, as a rule, falls on unheeding ears. The transactions for that delivery have been comparatively few.

Warning is once more given that purchasers for delivery the coming quarter are likely to be disappointed by delay in deliveries. It will not be owing to the fault of shippers, but it will be owing to circumstances they cannot control.

There is some talk about the situation being relieved by an increased output from now on; but that is very problematical,

and there is little prospect of that with the weather so strongly against it.

Coal and coke maintain their firmness, and prices are unchanged at \$1.25 to \$3.50 for coal, according to quality, and for coke it is \$3.75 to \$4. The demand is very fine, and so urgent is it that the usual knock-off on account of Christmas will be lessened materially. It is gossip that one very large pork-packing concern is in the market inquiring for 100,000 tons for strung-out deliveries during the coming year. It is said that the coal is to supply various plants that they will erect on the Gulf coast for canning purposes.

Some litigation involving the Palos mines is threatened, and there is gossip that after the turn of the year there will be some consolidation of coal interests that will merge the individualities of the smaller interests with others of more commanding capital and greater output. The identity of the little fellows will be obscured and new names will ornament the doorplates. Everything is tending to consolidation.

The Yolande Coal & Coke Co. has entered the field of competition. It sunk its slopes last September, and is now getting out enough coal for the market to pay running expenses, a feat that excites comment in coal circles.

The United States Pipe Works is still in the field for business, and has lately secured a contract from the city of Montgomery for pipe for the water-works system aggregating 42 miles and ranging in size from two inches up. Since last report it has been a heavy shipper of pipe and other material to the Panama Isthmus. It has no time to take longer than a day off for Christmas. Coming after it is the Dinmick Pipe Works. It has had its sleeves rolled up for some time past, and the past week added an order for 15,000 tons of pipe from St. Louis. Both works are full of work, and are so rushed that neither can afford the usual annual shut-down. The Hardie-Tynes Company secured the contract from the Montgomery Water-Works Co. for an air compressor at \$10,000.

Negotiations that have been pending for some time past for the consolidation of the American Trust and Savings Bank and the Alabama National Bank were concluded the past week. Their combined capital was \$400,000. The new bank will be dominated by the purchasers of the Alabama National Bank. It means another strong bank in the field, backed by all the necessary elements of success.

There was an important sale of real estate the past week that illustrates the enhanced value of property here favorably located. The O'Brien Opera House, that sold but a few years ago at \$60,000, was sold last week for a price stated to be \$140,000. To what use it will be put is not yet announced.

On the 29th the letting of the county convicts will be made, and there will be lively hustling to secure their services. Heretofore the two leading companies have been mild competitors for their hiring; but this time labor is so scarce that they will bring the limit of value for their possession.

J. M. K.

[Special Dispatch to Manufacturers' Record.] Birmingham, Ala., December 28.

Leading interests here are making sales non-delivery, first quarter, on a basis of \$14 for No. 2 foundry. Transactions are limited. The available supply of iron for new business is 50,000 tons or less. The market is very strong, with upward tendency.

J. M. K.

A complete grinding mill is to be installed in connection with a full course in sugar chemistry which Tulane University at New Orleans will add this year to its curriculum.

ELECTRIC AUTOS.**Nicola Tesla's View of the Future in Motive Power.**

[Special Cor. Manufacturers' Record.]
New York, December 27.

In view of the great interest which is being taken in the articles published by the Manufacturers' Record and some of the magazines on the development of new power-producers, through the internal-combustion engine, for use for transportation purposes both by land and sea, the following signed statement, made by Mr. Nicola Tesla after a discussion of a new type of auto-bus designed by Mr. Charles A. Lieb, mechanical engineer of the Manhattan Transit Co., will doubtless be read with much general interest:

"New York, December 17.

"Mr. Albert Phenix, Special Correspondent Manufacturers' Record, New York:

"Dear Sir—Replying to your inquiry of yesterday, the application of electricity to the propulsion of automobiles is certainly a rational idea. I am glad to know that Mr. Lieb has undertaken to put it into practice. His long experience with the General Electric Co. and other concerns must have excellently fitted him for the task.

"There is no doubt that a highly-successful machine can be produced on these lines. The field is inexhaustible, and this new type of automobile, introducing electricity between the prime mover and the wheels, has, in my opinion, a great future.

"I have myself for many years advocated this principle. You will find in numerous technical publications statements made by me to this effect. In my article in the Century, June, 1900, I said, in dealing with the subject: 'Steamers and trains are still being propelled by the direct application of steam power to shafts or axles. A much greater percentage of the heat energy of the fuel could be transformed in motive energy by using, in place of the adopted marine engines and locomotives, dynamos driven by specially-designed high-pressure steam or gas engines, by utilizing the electricity generated for the propulsion. A gain of 50 to 100 per cent. in the effective energy derived from the fuel could be secured in this manner. It is difficult to understand why a fact so plain and obvious is not receiving more attention from engineers.'

"At first glance it may appear that to generate electricity by an engine and then apply the current to turn a wheel, instead of turning it by means of some mechanical connection with the engine, is a complicated and more or less wasteful process. But it is not so; on the contrary, the use of electricity in this manner secures great practical advantages. It is but a question of time when this idea will be extensively applied to railways and also to ocean liners, though in the latter case the conditions are not quite so favorable. How the railroad companies can persist in using the ordinary locomotive is a mystery. By providing an engine generating electricity and operating with the current motors under the cars a train can be propelled with greater speed and more economically. In France this has already been done by Heilmann, and although his machinery was not the best, the results he obtained were creditable and encouraging. I have calculated that a notable gain in speed and economy can also be secured in ocean liners, on which the improvement is particularly desirable for many reasons. It is very likely that in the near future oil will be adopted as fuel, and that will make the new method of propulsion all the more commendable. The electric manufacturing companies will scarcely be able to meet this new demand for generators and motors.

"In automobiles practically nothing

has been done in this direction, and yet it would seem they offer the greatest opportunities for application of this principle. The question, however, is which motor to employ—the direct-current or my induction motor. The former has certain preferences as regards the starting and regulation, but the commutators and brushes are very objectionable on an automobile. In view of this I would advocate the use of the induction motor as an ideally simple machine which can never get out of order. The conditions are excellent, inasmuch as a very low frequency is practicable and more than three phases can be used. The regulation should offer little difficulty, and once an automobile on this novel plan is produced its advantages will be readily appreciated.

"Yours very truly, N. TESLA."

Kentucky-Tennessee Oil Field.

[Special Cor. Manufacturers' Record.]
Barbourville, Ky., December 26.

Three-hundred-barrel producers in the lower oil fields of Kentucky Saturday are greatly stimulating interest in the high-grade oil regions. Across in the Tennessee development a wildcat well also came in with a 75-barrel showing, and the week's work is altogether highly satisfactory. It shows a healthy condition of the industry in the lower fields in spite of the retarding influences of a reduction in the price of crude.

The favorable showing made by the Tennessee development is attracting a great deal of attention to that region. In the Poplar Cove section of Fentress county most of the present drilling is now being done, and a strike in that division does 75 barrels. Work there is still in the wildcat era, but the showing of oil has been encouraging enough to warrant a pipe-line extension, and the Cumberland Pipe Line Co. is now building a line to Poplar Cove.

The Standard Oil Co. is taking a great part in developments in the lower fields, and now has numerous rigs at work in all the divisions. The Standard is wildcatting along the Kentucky-Tennessee line, and is doing a great deal toward proving that territory. In the upper fields the Standard is developing the gas belt of Menifee county and is preparing to pipe the product of its wells to the city of Lexington.

In both the lower and upper fields the production of oil is increasing, although the season is not considered favorable to development. An average weekly production of about 25,000 barrels of oil is now being obtained. W. S. HUDSON.

West Virginia Coals.

"The Kanawha and New River Coal Fields of West Virginia" is the title of an attractive pamphlet written by Mr. Neil Robinson of Charleston, W. Va., briefly but fully describing the coals, coal seams and loading capacity of the mines now in operation on the line of the Chesapeake & Ohio Railway in the Kanawha and New River districts. Each seam is considered in the order in which it has its bedding, geologically, commencing with the youngest, and two maps representing an aggregate of about 840 square miles embrace a territory in which, according to the author, a greater variety of coals are produced and a greater number of coal seams are being mined than have ever been found in any area of similar extent. For an understanding of the mining industry in the districts Mr. Robinson presents a table which shows an ability on the part of the mines to load 67,515 tons a day, and he says:

"The Chesapeake & Ohio is essentially a coal road; 52.89 per cent. of the entire freight movement over its 1641 miles of

track during the year ending June 30, 1904, was represented by the coal and coke production originating on the line. Extensive piers have been erected at Newport News for loading coal destined to coast and foreign ports. Connections are made at Richmond, Charlottesville, Basic and Lynchburg for the Eastern and Southern States; at Gauley Junction for the interior of Ohio, Toledo and Detroit; at Ashland for points reached by the Detroit Southern, and from the company's terminals at Louisville and Cincinnati shipments are made to the West over all of the roads entering those cities."

The Encyclopedia Americana. Sixteen Volumes. Illustrated. Publisher, The Americana Company, New York and Chicago.

One of the contradictions of American life has been its dependence upon foreign parts for the bulk of its substantial literary pabulum. This has been especially marked in case of encyclopedias and other reference books, many of the standard ones being of English origin, or, if produced in this country, following English styles and lacking native characteristics. Original in so many other respects, Americans have been unduly content to follow foreign models long since any such course was necessary. This reproach—for it has been a reproach—has been removed by the publication of the Encyclopedia Americana, American in conception, American in production and satisfying the American desire for handy, thorough, succinct and up-to-date information. Its 16 volumes, filled with illustrations, diagrams and maps, made for it alone, may not contain some material which is the stock of other encyclopedias, but that is because its projectors determined to disregard dead wood, and have succeeded admirably. Realizing that American life touches all world points, they have developed the encyclopedia upon a universal scope, with practical utility, however, kept constantly in view, with the result that the relative importance of subjects foreign and American has been very effectively subverted. While eliminating or reducing to proper proportions matter which in earlier productions has occupied so much unnecessary space, the editors have embodied in their work much miscellaneous information bearing upon biographical and geographical names, actual and legendary characters in fiction, notable buildings, works of art, books, plays, etc., that may not be found in such convenient form anywhere else.

One of the most acceptable features of the Encyclopedia Americana is its system of cross-references. In its first volume, for instance, more than 125 pages are filled with matter dealing with America. The leading article treats of American geography, physiography, climatology, geology, flora, fauna and political divisions. This is followed by resume of discovery and colonization, succinct facts about the United States and articles dealing with industrial, economic, social, educational, commercial and ethical manifestations of life in the United States. There are to be found articles upon American commerce, diplomacy, farm machinery, labor, literature, manufactures, merchant marine, newspapers, political issues, printing, publishing, railroads, shipbuilding, street railways, etc. There are, besides, references to books, such as "The American Commonwealth" by James Bryce, to the hymn "America" and to "America's Cup," indicating the wide scope of the compilation, while the lines "America, Prehistoric; see Archaeology, American," show the method of cross-reference. In the sub-topic "America, United States of," are references also to sections of the matter

dealing especially with United States which fills nearly 300 pages of the sixteenth volume. The general outline of the country's history is by Professor Andrew C. McLaughlin, and the several stages of its history are covered by authorities as briefly as their respective subjects permit. The purpose to ensure accuracy as to facts and judgment in philosophy is indicated by the choice of the writers upon the period of the Civil War, Prof. W. H. Mace of Syracuse University discussing the causes of the war; Gen. Joseph Wheeler, secession; Prof. Edwin W. Bowen of Randolph-Macon College, Virginia, military events of the war; Prof. John R. Ficklin of Tulane University, Louisiana, the confederacy, and Prof. James A. Woodburn of the University of Indiana, the political events of the war. Of course, everyone recognizes the difficulty in history-writing of meeting the points of view of a variety of readers, but many of those difficulties are overcome in the Encyclopedia Americana, inasmuch as its point of view is mainly the point of clear-cut information, regardless of theories of writers or readers. That principle obtains throughout the publication.

All material is freshly handled; the leading articles have been written by representative scholars of America, each selected because of his proven qualifications for doing the best in his particular field. Every department has had active personal editorial care of men distinguished in the several professions of the country, and the magnitude of their task is emphasized by the fact that more than 1000 contributors co-operated in the production of the work. The outcome is so comprehensive, so clear and so convenient that the Encyclopedia Americana will undoubtedly be welcomed by the scholar, the student, the statesman, the professional or business man and in the home circle.

The signed articles in the Encyclopedia were written especially for it by authorities in their respective fields, and experts were the authors of the unsigned articles. The whole publication had as its editor-in-chief Frederick Converse Beach, editor of the Scientific American, with George Edwin Rines, managing editor, and the following associate and advisory editors: Simon Newcomb, Ph.D., LL.D., D.Sc.; James E. Creighton, A.B., Ph.D.; Robert S. Woodward, C.E., Ph.D.; David Starr Jordan, Ph.D., LL.D.; Russell Sturgis, A.M., Ph.D., F.A.I.A.; Edward Everett Hale, S.T.D., LL.D.; Andrew C. McLaughlin, A.M.; Sylvester Burnham, D.D.; James H. Kirkland, Ph.D., LL.D.; Smith Ely Jelliffe, A.M., Ph.D., M.D.; Allan Douglas Risteen, Ph.D.; John J. Wynne, S.J.; George Letchworth English, A.A.A.S.; George McKinnon Wrong, M.A.; Charles W. Colby, M.A., Ph.D.

Talk of Considerable Building.

W. Hume Logan, president Dow Wire Works Co., Louisville, Ky., writes to the Manufacturers' Record as follows: "While our business has perhaps been a little larger in the aggregate this year than heretofore, at the same time the percentage of profit has been smaller. We have not found as much ornamental and wrought-iron work to figure on during this year as on two years previous, and it has been figured closer by all parties. There has, as we all know, been considerable stiffening in the iron market, yet the fact that cotton has declined so much does not put so favorable an outlook on business in the South. It is a little early yet to form an opinion of what business next year will be. There is talk of considerable building, and we believe that 1905 will be fully as good as 1904."

THE POWER SCHOONER

Equipped With Hoadley-Knight Internal-Combustion Engine.

By WALTER H. KNIGHT, Providence, R. I.

[Written for the Manufacturers' Record.]

The steamer has never entirely supplanted the sailing vessel and it never will, for the sailing vessel is coming again to its own. Wind, the power that is made as you go, and that you get for nothing, so to speak, is a difficult thing to compete with by any fuel-consuming engine. It has even come to pass that sailing vessels built of steel and furnished with power for handling the sails, hoists, windlasses, etc., have, when constructed on a sufficiently large scale, not only successfully competed with steam vessels, but in many instances have shown greater earning power in spite of their many obvious drawbacks, such as liability to be becalmed, difficulty of proceeding against head winds, danger of drifting onto lee shores, expense of towing into ports, number of men required to handle the sails, and, greatest of all, the absolute inability to make

any price. Then, even with frequent renewals, the space occupied by the fuel subtracts considerably from the cargo space. Moreover, accidents to the machinery often happen far from suitable repairing places and engineers are not always readily available.

It has therefore long been recognized that the sailing vessel has need of some power which would free it from the caprices of the winds and water currents without interfering with its sailing efficiency. Such a power is promised in the Hoadley-Knight internal-combustion oil engines burning crude oil. These are now being made of such large sizes as will be applicable to the larger sailing vessels. Just why this form of engine will save the day for the sailor may not be at once apparent. Why not the steam engine? will be asked. Steam engines have been

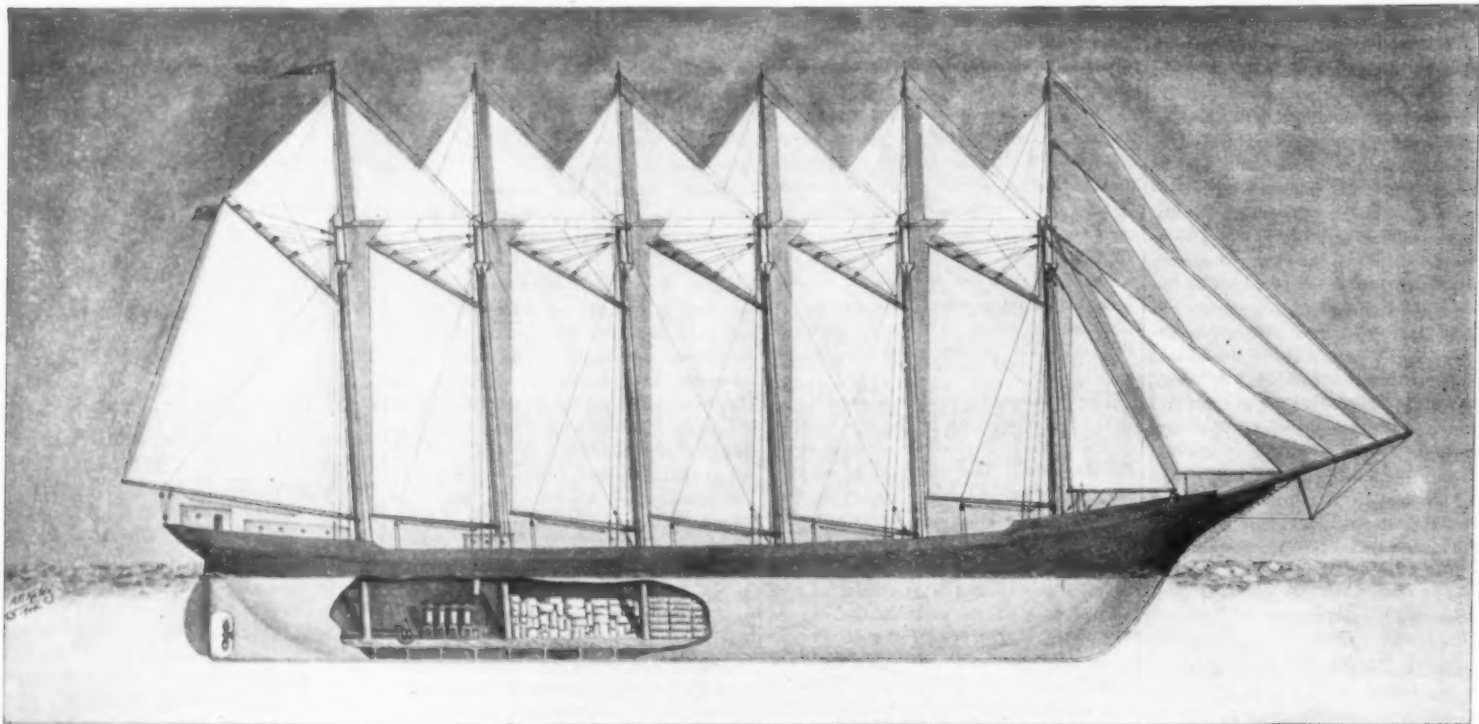
can be only a small amount of fuel carried. The screw must be able to turn freely without the engine when the vessel is under sail. The engine must also be available for operating such auxiliaries as electric hoists, pumps, etc. Finally, both the crew and the vessel when sailing must work with full efficiency just as if there were no power on board.

The sailing vessel has waited for the advent of the high-power Hoadley-Knight internal-combustion engine to fill these requirements. It is true that our smaller sailing craft have been for some time making use of internal-combustion engines as auxiliary, while the oysterman or fisherman who has not added to his sailboat a "put-put" to make him independent of the winds and tide in serving his impatient market is rapidly disappearing from the seas. These small engines, of course, use a refined high-grade oil that would be prohibitive in cost for large vessels, but they show very clearly the manner in which the internal-combustion engine can come to the aid of the sailor without bringing any such disadvantages as a steam engine would entail.

The ordinary tramp steamer, with both

Assuming that the winds are unfavorable one quarter of the time and that during another quarter of the time they are so light as to justify bringing in the assistance of the engine, we would have the engine operating on an average of 50 per cent. of the time and with a resultant saving of about one-third of the time required for the voyage with sails alone. There would be trips when the engine would perhaps be operating only in making port, and there would be other times when the sails would not be raised from departure to arrival; and, as hinted before, this is just where the greatest value of the engine would come in, namely, in assuring arrival at a predetermined date.

Such a vessel is able to add 30 per cent. to its gross receipts, and this in many cases would mean a doubling of the net receipts. The capital charge for the addition of the power is only 10 per cent. of the cost of the vessel. To add 10 per cent. to your capital account, and thereby double your net income, is what the proposition would mean in most instances. A type of such a vessel is shown in the illustration. The schooner rig is preferred even for "off-shore" work because of the



POWER SCHOONER EQUIPPED WITH HOADLEY-KNIGHT INTERNAL-COMBUSTION ENGINE.

schedule time. Not only are expensive cargoes delayed days and even weeks beyond the time of their expected arrival, thus adding to the heavy interest and insurance charges, but equally valuable dock and terminal plant is likewise compelled to lie absolutely idle, resulting in a material diminution of its economic efficiency. To this must be added the expense that such uncertainty and delay entail upon both the sender and receiver.

On some short routes the winds blow with such regularity and the help of the over-ready steam tug is so near at hand that these disadvantages do not seriously interfere with the efficiency of the sailing craft. This is especially the case when the time spent in loading and unloading or in waiting for cargo bears a large proportion to the time en route. It was to overcome the disadvantages of long voyages that inventive ingenuity was most needed, for there are many reasons why a sailing vessel is better fitted for long voyages. Among these is the fact that a steamer going on a long voyage must make frequent stops for fuel, and in many parts of the world coal is extremely expensive and sometimes hard to get at

used for this purpose with moderate success, but they brought with them troubles of their own which practically offset their advantages. A sailing vessel wants to sail whenever it can; it wants all it can get of the power that costs nothing. Therefore, if it be equipped with auxiliary power, that power must fulfill the following conditions: The machinery must not infringe materially on the cargo space nor add materially to the displacement, for it is this unimpaired cargo space that is one of the great points in a sailing vessel as compared with a steamer. The fuel also must not infringe on cargo space or displacement. The power must be ready-to-hand when wanted, and when not wanted must be capable of being quickly stopped, and when the power is not being used there must not be any draft upon the fuel, for the idle time of the engine is too great to be able to stand the cost of keeping alive of banked fires or anything of that sort. The power must not require the continual attendance of high-priced attendants, but should make use of the help already aboard the ship. The fuel should be liquid and stored in tanks in the bilges. The engine must be of the highest economy, for there

its engine and its fuel placed as far aft as possible, often puts the vessel very much out of trim when running light, but with the Hoadley-Knight internal-combustion engine the petroleum is stored in the ballast tank in the bilge space and can evidently be so placed as to trim the vessel perfectly, and as used can be replaced by water ballast to keep the boat trimmed in any way desired.

The expense of installing such an engine would be justified by the single item of towing charges saved. It would be also justified by the use that could be made of it in hoisting sails, weighing anchors, pumping, operating hoists, etc., without any reference to its use for propulsion of the boat.

It is not the purpose to make the equivalent of a steamer. As suggested before, the vessel must remain distinctly a sailing craft, and therefore the engine will be of moderate power in proportion to the size of the boat. A speed of six or seven knots is all that would be expected of the power alone, and when working with favorable winds the assistance of the engine will add two or three knots to what the boat would do with the wind alone.

facility of handling its sails by power. Sailing schooners of steel with six and seven masts have already demonstrated their superior earning capacity over the smaller wooden vessels of three and four masts, carrying as they do four times the cargo with only a few more sailors. A four-masted schooner would carry nine men all told and a six-masted would have the same force with five more sailors, an addition of some 30 per cent. to the total pay-roll. This force would be sufficient to also operate the oil engine, for when the engine is required the sailors' work is at a minimum.

With such a schooner 350 feet long, having a beam of 45 feet and a depth of 30 feet, some 6000 tons of coal can be carried, and as the speed never need be less than six knots, a distance of 144 knots a day can be insured. Such a vessel can go through the great ship canals on its own power, a fact of increasing importance. A sailing vessel that can guarantee deliveries from New York to Liverpool in 20 days is as good as a steamship for all except the most perishable freight. A six-masted schooner such as shown has five hatches between the masts, and with

the ample power furnished by the internal-combustion engine loading and unloading can go on simultaneously at all of the five places. The hoisting machinery is operated by electric motors deriving power from a generator direct-connected to the engine. The screw, of course, is disengaged when the engine is furnishing power to the hoisting machinery while at the dock, but when sailing the engine may run both the screw and the generator, power from the latter being used for hoisting sails or pumping, lighting, etc.

The insurance cost of such a vessel will be materially reduced, for the risk of loss will be much less. Further, the cost of transportation being so much reduced, there will be no necessity of going to extraordinary expense in crowding and assorting cargoes. Thus in the case of cotton cargoes there could be considerable saving in time both of ship and dock by not screwing the cotton in the hold as it is done at present. The expense of this process is enormous, requiring a long time to load a boat and employing the most expensive and troublesome help, and resulting in more or less injury to the bales. When it comes to harbors where lighterage is necessary, as is the case in all the oriental ports, what a boon to have the power to quickly load and unload. Think of a ship of this kind on the great waste-places of the Pacific ocean, where sailing vessels crossing the calm belts or horse latitudes are becalmed sometimes for weeks, or think of it pushing its way through the Straits of Magellan while its sister sailing ships are beating against a contrary wind around the Horn. A week saved there and a week here, with the certainty of landing at destination not later than a certain day, will be sure to make the new Yankee boat a popular one among shippers the world over.

When it is remembered that the ordinary tramp steamer scarcely makes better time than this boat would with all sails furled and would be easily distanced by it with any good breeze, it would certainly look as if the days of the steam tramp, as well as those of the full-rigged ship, were as good as numbered.

In the bilge space between the double bottoms of a schooner like the one described above 1000 tons of oil could be stored, and as the engine would require one-third of a pound of oil per horse-power per hour, there would be used not to exceed 300 pounds of oil per hour, the engine being of 800 horse-power, covering a distance of practically 150 miles per day and a consumption of practically 7000 pounds for 150 miles traveled. It will be readily noted that with no wind-power and operating with the fuel alone a distance of over 40,000 miles could be traveled; and in all the long-distance trips throughout the world it is very safe to assume that one-half of the time would be traveled under full sail. This will allow a schooner of this kind to cover a distance of 80,000 miles on one charge of oil. It will be borne in mind that the fuel carried for accomplishing this would in no way interfere with the cargo-carrying capacity and that the oil cost would average less than 10 cents per mile. In this calculation it is assumed that 800 horse-power will be sufficient and the oil can be had at three cents per gallon. What this means to the shipping world a marine merchant can fully appreciate. Attention should also be called to the fact that the fuel oil would be bought at ports where the lowest cost could be obtained, and it would therefore be carried about merely as ballast until used and as a complete insurance that the boat will never travel slower than six knots an hour.

Perhaps the interest that the American people will take in the cutting of the

Panama canal will help kindle our ambition to be something on the high seas, as it will surely educate us out of the rut of thinking that the only good trade is home trade.

The greatest importance of this new system for the propulsion of ships should be derived from the shipping ports on the Gulf, inasmuch as the oil can be practically had by means of a pipe line delivered into the hold of the vessel by what would mean almost gravity. Fuel oil being the best for this particular purpose, will make business for refineries along the Gulf ports. Great shipbuilding plants will undoubtedly spring up in this same section, and there can be no question that the internal-combustion engine will play a great part in both the building of the Panama canal and the operation thereafter. Pumping stations placed at Colon on the Atlantic side and at Panama on the Pacific side, with a pipe line parallel to the canal, would enable tank-line steamers propelled by their own cargo to serve the Colon pumping station from Galveston and the Panama station from San Pedro. Such an arrangement would also enable the ships carrying their cargoes to the Orient to load with fuel without loss of time, for while the ships are in the locks they can be taking on oil from the pipe line. It will also be seen that great advantage will be had in operating the ship canal night and day, as is done in the Suez canal in Canada. Power for electric lights and the opening and closing of the gates and for machinery of various kinds necessary to the operation of the canal will be supplied by the internal-combustion engine receiving its fuel from a pipe line which will not be handled in any other than an automatic manner.

It is interesting to speculate on the effect on commerce of such an improvement. It will surely augment enormously the number of ships which will pass through the canal. The development of the power schooner should in the next few years add not less than 1000 ships to the already long list of vessels engaged in the world's carrying trade, and there will be room for all and use for all, because each added facility for marine transportation brings about an increase in international trade.

If commerce is a measure of progress, as has sometimes been asserted, are not those peoples who give it the greatest encouragement entitled to rank as the leaders of civilization? Certainly one of the characteristics of a savage tribe is self-sufficiency—its lack of intercourse with even its near neighbors. Yet how many of our civilized nations are entirely free from a tendency to barbaric self-sufficiency!

Wireless telegraphy and submarine signaling are great helps to navigation. Now we want compasses that will be independent of the effect of the iron in the vessel and instruments that can give the latitude and longitude without observations. Invention has been the creator of modern commerce; the boat itself, the oar, the rudder, the sail, the compass, the sextant, the steam engine has each marked an epoch, but invention is yet in its childhood.

Russian Coal.

In nine years the output of Russian coal increased from 3,750,000 tons to 16,000,000 tons, and because of an import duty the trade of British coal at Odessa, Russia, has practically ended. This fact leads the Colliery Guardian of London to question whether the Russians will succeed in getting markets in Southeastern Europe and Egypt away from England. It thinks there is little danger of this happening, but suggests that care should

be taken to insure that shipments of coal from England are up to their professed standard.

Good Location for Veneer Plants.

Owing to the large quantity of gum timber which can be purchased at a reasonable price in the country surrounding Colonial Beach, Va., that town has every inducement to offer manufacturers who are seeking locations for veneer plants, basket factories and other industries using the character of wood mentioned. Information can be obtained by addressing the Bank of Westmoreland at Colonial Beach.

Cottonseed at Marseilles.

Three large oil manufacturing plants have been built at Marseilles, France, during the past year to handle the increasingly heavy arrivals of oleaginous seeds of various kinds. United States Consul Robert P. Skinner reports that the import of this material, amounting during the first 10 months of 1904 to 375,275 tons, has been so great as to prevent serious competition by American cottonseed oil, which finds more remunerative markets elsewhere. Of the cottonseed oil imported, 11,283 tons have come from the United States, 1264 tons from Great Britain and 271 tons from other sources. During the fiscal year ended June 30 the exports of Marseilles oils to the United States reached a value of \$477,309, of which \$625 was charged to cottonseed oil.

Cottonseed Notes.

The cotton-oil mill at Clayton, N. C., is equipping a fertilizer plant.

Fifteen cottonseed-oil mills with an aggregate capital of \$312,000 were chartered in South Carolina in 1904 and two mills increased their capital by 50 per cent.

It developed as a conference at Waco, Texas, last week of cottonseed-oil men that oil and other products from cottonseed have been accumulating, while the price has steadily declined until the manufacturers are compelled to try to devise some means of relieving the situation.

Phosphate and Fertilizer Notes.

Nashville fertilizer factories have shipped during the past 12 months about 150,000 tons of material valued at \$3,600,000.

Large shipments of phosphate rock and acid phosphate have been made from Charleston, S. C., to Northern ports during the fall and early winter, and last week the Virginia-Carolina Chemical Co. sent 1000 tons of fertilizer to Galveston.

During the past fall the American Rice Cereal Company of Texas, with offices at Kansas City, has carried through the rice belt of the State capitalists of Illinois, Ohio, Wisconsin, Missouri, Iowa, Michigan, Minnesota, Kansas, the District of Columbia and Massachusetts for the purpose of extending interest in rice culture in the Southwest. The company owns 17,000 acres of land in Texas, of which 9000 acres are now growing rice, and it operates two rice mills with a daily capacity of 1000 barrels, ample warehouses, etc. The several parties of visitors have adopted resolutions encouraging the company in its efforts.

It is reported from Louisville, Ky., that George E. Evans has been elected fourth vice-president of the Louisville & Nashville Railroad, and that B. M. Starks has succeeded him as general manager. The appointments of Richard Montfort as consulting engineer and of W. H. Courtenay as chief engineer are also announced.

The National Association of Brick Manufacturers will meet at Birmingham on January 30.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

RAILWAY IMPROVEMENTS.

Reports From a Number of Companies Concerning Betterments to Properties.

Several railroad companies among those which reported to the Manufacturers' Record statistics covering the amount of new line built during 1904 also sent information about other work done upon their lines. Some of the companies also have construction under way in territory outside of that covered by the annual review printed elsewhere in this paper, and they have furnished data concerning it so that an adequate understanding of progress might be had.

Mr. Milnor P. Paret, chief engineer of the Kansas City, Mexico & Orient Railway, writes from Kansas City: "During the year we have graded from Eldorado, Kan., northerly about 30 miles. We have graded and laid track from Milton to Wichita, about 32 miles. We will have erected at Fairview, O. T., a machine shop 126x60 feet. We laid track in Texas from Sweetwater north about 10 miles.

"In Mexico we have laid track from Chihuahua east about 55 kilometers and grading about 120 kilometers. West of Minaca we have graded about 75 kilometers and track laid about 10 kilometers. We have ordered steel for the bridge across the Guerrero river at the end of kilometer 10 west of Minaca, and will be putting this bridge in the first of the year. It consists of seven spans of 50 feet deck girders. The masonry is in. From Topolobampo east we have 100-odd kilometers of track laid and grading about 130-odd kilometers.

"During the following year (1905) we hope to extend grading and track to about kilometer 200 east of Topolobampo, and to extend grading and track to about kilometer 100 west from Minaca, and to extend the grading and track east from Chihuahua to the Conchos river, about kilometer 140.

"We also hope to do a good deal of tracklaying in Texas north from Sweetwater, and lay track from Eldorado to Ellinor in Kansas, and have our trains running into Kansas City partly over leased lines. We also expect to complete the grading and lay track from Fairview south as far as Thomas, O. T."

Mr. Wm. N. Page, chief engineer of the Deepwater Railway, which is building southward in West Virginia towards the Bluestone river, writes from Ansted, W. Va., that of the 85 miles of road under construction between the Bluestone and Kanawha rivers, 10 miles of the track have been laid with 85-pound steel rail and 50 miles additional are 95 per cent. completed and will be ready for track very soon, if not already so, with the exception of Jenny's Gap tunnel. The line will be pushed as vigorously as possible through the year 1905.

Mr. G. W. Meeker, president and general manager of the Beaumont, Sour Lake & Western Railway, writes from Beaumont, Texas: "We extended our line from Meeker to Sour Lake, a distance of 12 miles, and began the operation of our railway on the 18th of July of this year. We have about 22 miles of main line and our business is increasing daily. We traverse about 15,000 acres of rice territory which yields us a good freight revenue.

"We expect to extend our line, beginning early in 1905, in a northwesterly direction, and will probably build during the coming year about 125 miles of railway. We will make two or three surveys

immediately after the holidays, and construction work will begin at least by early spring."

Mr. George Dole Wadley, vice-president and general manager of the Atlantic & Birmingham Railway, writes from Waycross, Ga.: "We are now engaged in spending \$100,000 or \$150,000 in rebuilding a portion of the Brunswick & Birmingham Railroad which the Atlantic & Birmingham Railway has recently purchased. These expenditures include several changes of the line between Nichols and Offerman, improvement of terminals in Brunswick and building of small shops at that point."

Mr. H. D. Emerson, vice-president of the Darien & Western Railroad, writes from New York that the company which had at the beginning of 1904 21.5 miles of railroad in operation from Darien to Darien Junction, Ga., also owned two miles of track from Crescent to Belleville and four miles of track west of Darien Junction, which two pieces of line were not operated and were badly out of repair. The company has rebuilt the existing railroad and extended it to Liberty City from Darien Junction via Tibet and Goose Pond. This gives the road 41.2 miles, including the two miles from Crescent to Belleville.

Concerning the progress of the Liberty-White Railroad, formerly only a lumber line, Mr. W. M. White, general manager, writes from McComb City, Miss., as follows: "The Liberty-White Railroad is the outgrowth of a narrow-gauge logging road which extended from McComb City, Miss., in a westerly direction for a distance of 13 miles. This logging road was purchased by the Liberty-White Railroad Co., changed to standard-gauge and extended to the town of Liberty, Miss., the county-seat of Amite county. A spur extension of 12 miles, termed Louisiana Line, was made from a point seven and one-half miles west of McComb and extending in a southwesterly direction. This extension was built narrow-gauge. The narrow-gauge road was built primarily for log purposes, but traffic is carried on over it. There is also laid to McComb, from the junction of the narrow and standard-gauge roads, a third rail for the use of narrow-gauge trains on the standard-gauge roadbed. The narrow-gauge road will be extended about six miles during the coming year.

"The standard-gauge road was completed to the town of Liberty July 20 and opened for service on that day. Prospects are flattering for an extension of the Liberty road during the coming year, either to Baton Rouge, La., or Natchez, Miss. Practically all of the construction on the standard-gauge road was done during the year 1904. During the few months of operation earnings have been quite satisfactory, and we see no reason that earnings should not increase considerably during the coming year."

Mr. W. D. Duke, general manager of the Richmond, Fredericksburg & Potomac Railroad and the Washington Southern Railway, writes from Richmond, Va.: "We are engaged in rectifying the alignment and making other improvements in the line between Richmond and the Potomac river. There has been no new track opened for traffic on the Washington Southern Railway during 1904, but we expect to be using track on the new location upon the entire length of the Richmond, Fredericksburg & Potomac Railroad between Richmond and Quantico early in 1905."

Mr. Thom. J. Brereton, engineer of the Cumberland Valley Railroad, writes from Chambersburg, Pa., that the company expects to have about five miles of double track between Greencastle, Pa., and

Mason-Dixon in operation about April 1 next. This change includes about a mile and a-half of revision of grades and alignment, which work the company is doing itself.

Mr. A. N. Bullitt, chief engineer of the Mobile, Jackson & Kansas City Railroad, writes from Mobile, Ala., that in addition to building new line, the company has during the year converted 18 miles of track from narrow to standard gauge between New Albany and Pototoc, Miss., and that next year it will also convert from narrow to standard-gauge the line from New Albany to Middleton, Tenn., 44 miles. All this is in Mississippi excepting five miles south of Middleton, which is in Tennessee.

Mr. H. B. Jeffrey, treasurer and auditor of the Marion & Rye Valley Railway, writes from Marion, Va., that the improvement from Currin to Sugar Grove, Va., nearly 12 miles, was completed last March. The line will not go any farther at present.

Mr. Ernest Williams, president of the Charlotte, Monroe & Columbia Railroad, writes from Lynchburg, Va., that the extension from Hamburg to Jefferson, S. C., was completed; also that stations have been finished along the line and that both passenger and freight trains are being operated between McBee, S. C., and Jefferson. Furthermore, he says: "We will ultimately build to Monroe, N. C., thereby making a short line between Charlotte and Columbia in connection with the Seaboard Air Line."

Mr. Henry M. Steele, chief engineer of the Central of Georgia Railway, writes from Savannah, Ga., that the company proposes for 1905 a general betterment of its Chattanooga district.

Mr. Henry Clay Bridgers, president of the East Carolina Railway, writes from Tarboro, N. C., that the only work done during the year was the building of a passing track 1600 feet long at Macesfield, N. C.

Mr. C. W. Lewis, superintendent and chief engineer of the Texas City Terminal Co., writes from Texas City, Texas, that the company has not done any construction outside of sidings during the year, but that it is contemplated to make short extension of the main line from Texas City Junction four miles to a connection with the Gulf, Colorado & Santa Fe Railroad at Fairwood, Texas.

Mr. J. W. Oglesby, president of the South Georgia & West Coast Railway, writes from Quitman, Ga., that part of the stockholders of the line have built 25½ miles of track from Greenville to Perry, Fla., and leased it to the company for 20 years, making 77 miles operated by the company. This, it may be noted, completed the Greenville & Perry line, which was under construction at the beginning of 1904.

Mr. A. S. Baldwin, engineer of construction of the Illinois Central Railroad, writes from Chicago that there was built during the year on its Yazoo & Mississippi Valley line 21.8 miles from Yazoo City to Belzona, Miss., and 12.8 miles southward (no stations) from Lambert, Miss.; total, 34.6 miles. The line from Yazoo City to Belzona was practically complete at the beginning of the year.

Mr. W. N. Bemis, president of the Prescott & Northwestern Railway, writes from Prescott, Ark., that the company built from Tokio to Elberta, nine miles, and will build in 1905 about 10 miles from Elberta west to Nathan, Ark.

Concerning the construction of the Jasper & Eastern Railway, Mr. C. F. W. Felt, chief engineer of the Gulf, Colorado & Santa Fe Railway, writes from Galveston, Texas, that the line now building from Kirbyville, Texas, on the Gulf, Beau-

mont & Kansas City Railway, to a point near De Ridder, La., on the Kansas City Southern Railroad, will probably be extended 15 miles and branches will be built.

NEW TRACK IN MEXICO.

Comparatively Little Building Done During the Year—Outlook for 1905.

There was comparatively little railroad construction accomplished during 1904 in the Republic of Mexico.

Mr. Lewis Kingman, chief engineer of the Mexican Central Railway, writes the Manufacturers' Record from the City of Mexico: "We did not lay any track during the year 1904. We called all of our locating parties in last June. There has not been any construction work done this year. We expect to commence the line from Tuxpan to Colima during the year 1905. The Mexican government has arranged to put its silver dollar on a 50-cent gold basis, which will enable the railways to tell what they are doing."

Mr. E. W. Mead, auditor of the Rio Grande, Sierra Madre & Pacific Railway, writes from Ciudad Juarez, Chihuahua, Mexico: "In 1905 we anticipate constructing about 100 miles of road to the timber lands of Chihuahua." The location of the line has not yet been made.

Mr. C. L. Graves, general manager of the Chihuahua & Pacific Railroad, writes from Chihuahua, Mexico: "We are constructing some 55 miles of railroad from El Carpio on our present line to a place called Temosachic in Guerrero valley. We will not commence to lay track until the first of the year, and will have it completed by April 1, 1905."

Mr. J. F. Lynch, general manager of the Coahuila & Zacatecas Railway, writes from Saltillo, Mexico, that the company completed during the year a branch 28 kilometers or 18 miles long. Nothing outlined for construction next year.

Mr. W. S. Martin, general manager of the Mexican International Railroad, writes from Ciudad Porfirio Diaz, Coahuila, Mexico, that the only construction work done during the year was from Mezquite to Carbon, 3.75 miles, this being a spur to a new coal field in the State of Coahuila.

Mr. J. N. Galbraith, general manager of the Tehuantepec National Railway, writes from Rincon Antonio, Oaxaca, Mexico, that the company built no new mileage during the year, and that the only work was the construction of the new roundhouse and boiler shop at Rincon Antonio and improvements in the changing of short pieces of the old main line. No new mileage is contemplated for 1905.

SEABOARD AIR LINE.

President J. M. Barr Says More Facilities Are Required to Handle Business.

The annual report of the Seaboard Air Line for the fiscal year ended June 30 last shows gross earnings \$13,311,409, which includes \$561,138 of the Baltimore Steam Packet Co., which is part of the system; operating expenses \$9,509,837, including \$486,621 of the Packet Company; net earnings \$3,711,571; total income \$3,767,922; total deductions for interest, rental and taxes \$3,385,097; net income \$382,825.36, of which \$294,294.64 is for the rail lines and \$88,530.72 is for the Baltimore Steam Packet Co.

The company has entered into a car-trust agreement for the purchase of 10 consolidation locomotives, 500 ventilated box cars and 500 steel-under-frame box cars, to be delivered after the close of this fiscal year. During the previous year there were added to the equipment nine passenger locomotives, 22 freight locomotives and 325 box cars. At the close of

the fiscal year last June the equipment consisted of 112 passenger engines, 168 freight engines, 46 switching engines, 281 passenger cars, 9994 freight cars, 360 maintenance-of-way cars, eight barges, one tug, two launches and one pile-driver.

New steel rail, 70 pounds to the yard, was put in on 21 miles of track, and 75-pound rail was put in on 52 miles of track. This replaced 56 and 60-pound rails. There were also put in the track 945,374 ties for renewals. Other betterments included the filling in of 5522 feet of wooden trestles and building of culverts, and the placing of 60,600 cubic yards of gravel and stone ballast under the main track.

In conclusion, President Barr says: "The business of your road has outgrown its facilities. To secure its full share of the business moving and handle it at minimum cost it is necessary to provide additional terminal, track, mechanical and other facilities."

Overton County Railroad.

Messrs. Justice Cox, Jr., & Co., Land Title Building, Philadelphia, informs the Manufacturers' Record that all arrangements have been completed for the construction of the Overton County Railroad, 17 miles long, from the Tennessee Central Railroad to Livingston, Tenn., and that the firm is prepared with profiles, plans, etc., to receive bids for grading, trestles and tracklaying.

Continuing, the firm says: "This is the first section of what is to be quite an extensive operation, which will involve the construction of over 100 miles of railroad and develop a large portion of Tennessee and Kentucky now entirely without facilities and containing coal, oil and timber in large quantities."

Oklahoma City, Henryetta & St. Louis

The Oklahoma City, Henryetta & St. Louis Railway is the name of a new company which proposes to build from Woodward, O. T., via Oklahoma City to Checotah, I. T., 280 miles, and thence to St. Louis. It is reported that all but 50 miles of the right of way is secured, and that financial arrangements have been made to construct the line, work to start early in January between Oklahoma City and Henryetta. It is said that New York capital is behind the proposition, headquarters of which will be at both Oklahoma City and New York. The incorporators are H. W. Clegren, John H. Dible, J. H. Wheeler, J. W. Pryor and John W. Shartell of Oklahoma City, O. T.

Plant City, Arcadia & Gulf.

Mr. C. A. Root, one of the incorporators of the Plant City, Arcadia & Gulf Railway Co., writes from Plant City, Fla., to the Manufacturers' Record that the company proposes to extend the 12-mile line of the Warnell Lumber & Veneer Co., making a railroad about 75 miles long and reaching from Plant City southeast through Hillsborough, Polk, Manatee and De Soto counties to a point at or near Arcadia in De Soto county. Branches may also be built. The officers, who are also directors of the company, are: President and general manager, C. A. Root; vice-president, D. C. Thompson; treasurer, William Schneider; secretary, Albert Schneider.

NATCHEZ & GULF.

Report That Negotiations to Build It Are in Progress With the Gould Lines.

A report from Jackson, Miss., says that negotiations are pending between the projectors of the Natchez & Gulf Railroad and the Gould lines for the construction of the proposed road which is designed to run from Natchez to Gulfport,

Miss., 198 miles. The Natchez & Gulf recently renewed its charter. A. G. Campbell, president of the Natchez National Bank, heads the list of incorporators, and the other directors are J. A. Cole, S. A. Benoist, R. L. Leonard, J. W. Lambert, W. C. McGehee and C. H. Ratcliffe.

Bought Maryland's Canal Shares.

The Board of Public Works of the State of Maryland has accepted the offer of \$155,000 made by Vice-President F. S. Landstreet of the Western Maryland Railroad for its interest in the Chesapeake & Ohio canal, along the bank of which the railroad company is now building its extension to Cumberland, Md.

Railroad Notes.

The electric railway between Belton and Temple, Texas, has been opened for service. It is 12 miles long.

Mr. A. J. Cooke has been appointed soliciting agent for the Atlantic & North Carolina Railroad at Newbern, N. C., according to a circular from the office of Traffic Manager E. A. Neil.

Mr. Leon F. Lonnbladh, chief engineer of the Tennessee Central Railroad Co., writes from Nashville, Tenn., to the Manufacturers' Record that plans for an extension from Nashville to Chattanooga are not yet made.

Mr. Paul Y. Waters, general manager of the Chesapeake Beach Railway Co., 1416 New York avenue, Washington, D. C., writes the Manufacturers' Record that the conversion of the line from steam to electric motive power is as yet only in contemplation, nothing having been definitely decided.

Concerning the Kentucky Midland Railroad, which it is proposed to build from Madisonville to Central City, Ky., 26 miles, Mr. M. M. Wheeler, chief engineer, writes from Earle's, Ky., to the Manufacturers' Record that up to the present time no construction work has been authorized nor have any location surveys been made, although it is expected to begin location soon.

Mr. Arthur D. W. Walton, secretary and treasurer of the Southern Anthracite Coal Co., writes from Roanoke, Va., to the Manufacturers' Record that the company proposes to build a railroad. The work is to be started and completed next spring. The company has coal lands in Price mountain, Montgomery county, Virginia.

A circular-letter from the office of J. R. Kenly, fourth vice-president and general manager of the Atlantic Coast Line, announces the appointment of W. B. Denham as assistant to the fourth vice-president at Wilmington, N. C., and the appointment of Morton Riddle as general superintendent of the second division of the system, to succeed Mr. Denham at Savannah, Ga.

The Chesapeake Steamship Co. (York River Line) has discontinued its daily service between Baltimore, West Point and Richmond, Va., and is now operating a triweekly service, leaving Baltimore Tuesdays, Thursday and Saturdays at 5 P. M., and leaving West Point, Va., on Mondays, Wednesdays and Fridays at 5.50 P. M. The landing at Yorktown will be discontinued.

President G. L. Vincent of the Greenville Timber Co. writes from Emporia, Va., to the Manufacturers' Record saying that the railroad which it is proposed to build is to connect Smithfield, Va., with some point on the Norfolk & Western Railway yet to be chosen. The line will traverse a section fairly fertile, but its main object will be the development of timber lands. The road will be a common carrier.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

The Mistake of Too Great Cotton Acreage.

Once more the South's mistake of cultivating too much cotton land has made the growers suffer. Last winter the Manufacturers' Record urged the planters not to put in over 28,000,000 acres, showing how even that acreage might produce 11,500,000 to 12,000,000 bales. But tempted by the high speculative prices, against which we warned the speculators and the growers, the South planted 32,000,000 acres, and with an exceptionally favorable season it has astonished the world by the magnitude of its crop. Naturally prices have been driven to a low figure; but there is no occasion for despair. The South is financially able to carry over a considerable amount of this crop; many mills here and abroad will unquestionably stock up beyond their immediate needs, and, with the promise of a largely-reduced acreage next year, it is possible that the pendulum, which has already swung too far to the side of low prices, may ere long swing the other way. But even as matters stand the South can face the situation smilingly as compared with former years. It has had two years of very large grain crops; its diversified farm products are worth about \$1,000,000,000 a year, or almost double the value of its cotton crop, and even for this cotton crop as a whole, despite present low prices, it will receive almost, if not quite, double what it received for the crop of 1898. The magnitude of the yield demonstrates the strength of the South's monopoly of the world's cotton trade, and we shall now probably hear but little about any serious efforts to develop cotton-growing elsewhere in competition with the South.

Engineers of Erwin Mill No. 2.

Last week the Manufacturers' Record referred at some length to the No. 2 mill which the Erwin Cotton Mills Co. of Durham, N. C., is now completing at Duke, near Dunn, N. C. This is one of the most important textile enterprises undertaken in the South, and it is of some interest to note that the engineers in charge of its construction and installation are Messrs. F. P. Sheldon & Co. of Providence, R. I. This firm has been engaged on some of the most extensive mill projects of recent years. The Erwin plant represents the investment of \$1,000,000, which will be doubled in the future.

Proposed \$300,000 Mill.

A stock company is being organized at Selma, N. C., for the purpose of building a cotton factory to be equipped with 15,000 spindles and complement of looms for the production of 16-ounce cotton-duck bagging for covering cotton bales and 12-ounce cotton duck for making fertilizer sacks. The company will probably effect its permanent organization in January and begin construction work by April 1. The capital stock will be \$300,000, and it is understood that more than two-thirds of the amount has been subscribed. M. C. Winston, president of the Bank of Selma, is promoting the enterprise.

Towel and Quilt Mills.

The Jordan Manufacturing Co. of Spartanburg, S. C., recently reported, has purchased site for its plant and will at once arrange for the erection of a mill building to accommodate the 36 looms and accompanying apparatus which it has been decided to install at the start. Quilts and towels will be the product. Messrs. E. C. Rodgers of Charleston, S. C.; Ver-

non Muckenfuss and Lewis Thompson of Spartanburg and others are the incorporators, and the capital stock is \$25,000.

The Cotton Movement.

In his report for December 23 Col. Henry G. Hester, secretary of New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 114 days of the present season was 7,583,963 bales, an increase over the same period last year of 1,081,707 bales. Exports were 4,073,175 bales, an increase of 527,387. Takings by Northern spinners were 1,080,965 bales, an increase of 123,299; by Southern spinners 853,214 bales, an increase of 74,407 bales.

The Fairburn Mill.

The Fairburn (Ga.) Hosiery Mills, reported last week as incorporated, has a capital stock of \$25,000, of which \$7500 is paid in. L. S. Roan is president; H. L. Roan, secretary, and B. S. Roan, treasurer. The company has completed the installation of equipment and begun manufacturing misses' and children's hosiery; daily output 150 dozen pairs daily. There are 15 knitting machines, with complement of loopers, ribbers, finishing machinery, etc., in position.

Natchez Mills to Resume.

The Natchez Cotton Mills of Natchez, Miss., is preparing to resume operations after an idleness of nine months because of the unsatisfactory condition of the dry goods market. The company operates two mills and employs about 425 people. Its No. 1 mill has 12,496 spindles and 336 looms and the No. 2 mill has 9920 spindles and 300 looms. The product is unbleached domestics in shirtings, sheetings and drills; daily output about 10,000 pounds.

The Orange Mills.

The Orange Mills, recently reported incorporated with capital stock of \$75,000, has organized with George H. Cornelson, president; T. H. Wannamaker, vice-president, and W. W. Wannamaker, secretary-treasurer. This company has acquired the plant formerly known as the Orange Mills, but which was the personal property of Mr. Cornelson. There are about 5100 spindles and 2000 twistors in position.

The Ide Cotton Mills.

Messrs. Duke & Journey, contractors for the building of the Ide Cotton Mills, have completed the structure. A portion of the machinery for cotton manufacturing has already arrived, and it will all be in position by next month. The Ide Cotton Mills is a \$200,000 corporation which intends to begin operations with 6000 spindles and install 5000 spindles later on. It is located at Jacksonville, Ala.

Ginners Organize.

Ginners representing the States west of the Mississippi river have organized the National Cotton-Ginners' Association, with J. A. Kyler of Wynewood, I. T., president, and J. H. Connell of Dallas, Texas, as secretary and treasurer, with the purpose of gathering and furnishing to its membership reliable information about the amount of cotton and the condition of the crop in advance of government reports.

Additions Next Year.

The management of the Lydia Cotton Mills has decided to arrange for the installation of additional machinery during 1905. This increase will include 8000 spindles and 200 looms, which will give the plant a total of 20,000 spindles and 500 looms. No details have been decided at this time. An expenditure of approximately \$150,000 is probable.

The Hashuqua Plant.

A. M. Tynes of Shuqualak, Miss., who recently purchased the Hashuqua Manufacturing Co.'s cotton-mill property for \$26,000, will at once arrange to remove the plant to another city. He will select a location on a railway and operate by steam, power plant for which will be needed later. The mill has 1500 spindles, 40 looms, etc., and facilities for manufacturing cotton rope.

Cotton Manufactures Wanted.

A. R. Stansbury, manufacturers' agent, 160 Water street, Norfolk, Va., wants to make new contracts with manufacturers of cotton rope, cotton wrapping twine, seine twine and cotton bags. He sells exclusively on commission and employs a number of traveling solicitors who visit the mill-supply houses, hardware and paint trade and ship chandlers.

Textile Notes.

It is proposed to establish a large woolen mill at Kansas City, Mo., and the promoters are conferring with J. F. McAfee of the Topeka Woolen Mills, Topeka, Kan.

The John P. King Manufacturing Co., operating 60,384 spindles and 1812 looms on the production of cotton goods at Augusta, Ga., has declared a dividend of 3 per cent.

Messrs. B. Neely Moore, W. B. Moore, O. E. Williams, W. R. Carroll and W. I. Witherspoon have incorporated the Neely Knitting Mills of Yorkville, S. C., with a capital stock of \$60,000.

Messrs. R. J. Stough, P. A. Stough, F. C. Sherrill and J. B. Cornelius of Cornelius, N. C., will organize a stock company with capital of \$30,000 for the purpose of establishing a knitting mill.

Reports state that \$300,000 stock company will be formed at Selma, N. C., for the purpose of erecting a mill to manufacture cotton duck for covering raw-cotton bales. It is said that \$175,000 has been subscribed.

Dispatches state that August Andreas of Easton, Pa., is contemplating the organization of a stock company to establish a silk mill at Petersburg, Va. He is negotiating with leading business men relative to the enterprise.

Negotiations are in progress for the establishment of a cotton factory in a building at Augusta, Ga., controlled by Messrs. Alexander, Johnson & Steiner of that city. The names of the promoters cannot be announced as yet.

Increasing demand for the product of the Bonham Cotton Mills of Bonham, Texas, has prompted the management to decide upon the installation of additional machinery. About \$75,000 will be expended. Details have not been announced.

At the sale of the DeKalb Cotton Mills on December 23 at Camden, S. C., the highest bidder was George H. Wright of Union, S. C., at \$176,000. The property was awarded to him at that price, subject to court. There are about 10,000 spindles and 260 looms in the mill.

J. A. A. W. Clark of Augusta, Ga., has leased and will operate the cotton mill in the State prison at Speigner, Ala. He operated this plant during 1902 and 1903, and expects to begin manufacturing January 1 for the year of 1905. About 75 operatives—convict labor—will be employed. The Alabama Cotton Mills is the title of the mill, and it has 3500 spindles and 100 looms.

Corn received at New Orleans for export last week filled trains of cars which, placed together, would measure seven miles.

LUMBER

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

Treating Telegraph Poles.

Experiments already made by the national bureau of forestry show conclusively that telegraph poles can be subjected to a preservative treatment which insures materially lengthened service. This treatment consists in impregnating the wood with antiseptics which prevent the growth of the fungi that cause decay. The treatment of telegraph and telephone poles, when attempted at all in this country, generally has been applied to the whole pole, requiring the use of airtight cylinders 100 feet long or more. In these the poles are subjected to live steam for some time, when a vacuum is created. Creosote is then run in and pressure applied to force it into the wood. Manifestly this is a laborious process. Yet for telegraph and telephone poles only about one foot of the entire length needs to be made immune from fungus. If this foot at the fatal ground line can be preserved from decay the rest of the pole will take care of itself. Experiments will now be made in treating the butts of the poles for a distance of about eight feet, thus carrying the antiseptics just beyond the zone of decay attack. The creosote method will be used and dead oil of coal tar forced through the butt of the pole.

The telegraph companies have made little use of the preservative treatment. They employ millions of poles on their various lines, and it would be a tremendous economy to add even a few years of service to the life of each pole. But there will be another large saving both to them and to the forests through preservative treatment. To provide a good margin against decay, poles are now much larger than demanded by the strain upon them. It is expected that decay will quickly eat away a furrow around the pole at the ground line, and the diameter of the pole at that point is gauged to allow for this weakening process. When it is known that decay, in a certain number of years, cuts the diameter from perhaps 12 to 8 inches, and that below eight inches the weakened pole falls, the course to be pursued is obvious. Antiseptics prevent, for the time of their effectiveness, the starting of decay, and thus permit at the outset the selection of an eight-inch diameter rather than a 12-inch. The four inches saved represent a tremendous difference in the size and age of trees used for poles. Both companies and the owners of forests will be great gainers by this economy, with its shortening of the length of time necessary to grow a pole.

Big Florida Concern.

Work has recently begun on one of the largest yellow-pine lumber plants that has ever been built in Western Florida. It is that of the Aycock Bros. Lumber Co., incorporated under laws of Florida, with capital stock of \$50,000. The plant is at Allie, Jackson county, on the Louisville & Nashville Railroad. The company owns some 80,000 acres of virgin round timber of the finest quality southwest of Allie, and controls as much more. The saw-mill is a board and rift flooring mill, but will cut some export dimension. Logs will be handled over a standard-gauge railroad, nine miles of which have already been laid to the timber and the necessary heavy rolling stock put in use. The supply of logs will be stored in a large pond or basin built for the purpose of holding at least 2,000,000 feet. The mill will have a daily capacity of 75,000 feet, will be strictly modern throughout and very

fast. It will be operated on the work floor with 18 or 19 men, which is a remarkably small number for the capacity of the mill. The equipment will consist of an eight-foot band, a double-gear log jack and chain, the standard steam-deck machines and a large steam feed for working the carriage, which is a three-blocker built of steel. There will be two trains of live rolls for conveying the stock, and the flitches will be worked with a very heavy gang edger. A six-foot re-saw will split the cants and a rift-flooring gang will work the flitches into flooring strips. A transverse transfer will carry the stock over to the trimmer, whence the stock will be conveyed by a chain transfer to the dry-kilns. A three-saw slasher will cut up the refuse and drop same into an offal conveyor which runs alongside the mill and dumps refuse into a fire out in the log pond. One or two men will sort all refuse, putting it either to the lath bolter or through the "hog." Lath and shingle machinery will be installed opposite the slasher. The filing-room will be built on the right of the mill, while the engine-room is on the left. One lengthwise conveyor is all there is in the mill, with one crosswise conveyor to the boiler. One main shaft runs on post-hangers lengthwise the mill and will drive the machines. The engine is a slide-valve, 22x26 inches, driven by two boilers of 150 horse-power each, with "Dutch-oven" furnace, and set in steel castings "steamboat" style. The boilers will be fed with fuel automatically. The mill will be two stories high, with two 12-inch drops in the upper floor for the slasher chains and transfers, which run under the live rolls. The mill is about 46x156 feet. The boiler-house will be detached some distance from the mill and will probably be built of two-inch gas pipe, with corrugated-iron roof. One of the interesting features of this mill will be its freedom from complicated machinery, and, indeed, the small amount of machinery throughout the mill will be particularly striking to the experienced saw-mill man. Mr. W. S. Boynton is the chief millwright, and it is expected to have this mill in operation by next April or May. The machinery is furnished by Clark Bros. The plans were drawn by Mr. C. M. Steinmetz, who designed the entire plant and also closed the contract with Aycock Bros. Mr. Steinmetz has been very successful in designing large plants and selling the machinery with which the same have been equipped.

Forestry and the Railroads.

Upon the advice of the bureau of forestry the Gulf, Colorado & Santa Fe Railroad eight months ago began to experiment with wooden tieplates. These plates are intended to protect the tie from wear under the rail. They are cut the width of the bottom of the rail and as long as the tie is wide—usually six or seven inches—and are kept in place by the weight of the rail, in a flat groove in the tie. The results of the experiment are of much interest both to the railroads of the country and to those who have at heart the cause of forest protection.

The Santa Fe placed cypress tieplates one-quarter of an inch thick on several thousand old and much-worn cypress ties laid in its track north of Galveston, Texas. After eight months of constant use the plates are perfectly sound and show practically not a trace of wear. The officials of the road are greatly pleased with the result of this trial.

The bureau of forestry will now make similar experiments with red gum, red oak and beech tieplates, which will be placed in the tracks of the St. Louis & San Francisco, the Burlington and the Northern Pacific systems. These are all

harder woods than cypress, and are therefore less liable to wear under the rails, but are much more subject to decay. The tieplates made from these woods will therefore all be heavily creosoted. This will make them about as resistant to decay as the untreated cypress, while their much greater hardness will better qualify them to resist the wear of the rails.

For a number of years cross-ties have been treated with preservatives, and tieplates of iron have been used to increase their length of service. Tests are constantly being made by the bureau of forestry to improve the character of the preservatives and the methods of their application, and to enlarge the number of woods used for railroad-construction purposes. Experimenting with wooden tieplates is work along the same economical line, in the interest of both the railroads and the forests. The use of a tieplate prevents wear on the tie and adds years to its service; wooden tieplates are being successfully substituted for the more expensive iron, and abundant and cheaper woods, through preservative treatment, are becoming available to take the place of scarce and expensive woods. When a wooden tieplate is worn out a new one can be quickly and cheaply inserted in its place. In Europe these plates cost but \$2 a thousand, or \$2 for every 500 ties, since two are used upon each tie. Preservative treatment keeps the tie from decaying, the wooden tieplate keeps it from wearing, and the use of both will result in a huge economy for the railroads, which will react favorably upon our forests. The whole subject of cross-tie economy was fully discussed by Dr. Hermann von Schrenk of the bureau of forestry in Bulletin No. 50, entitled "Cross-tie Forms and Rail Fastenings, with Special Reference to Treated Timbers." The present experiments are in continuance of lines of work therein indicated.

Hickory Dying Off.

More than 200 representatives of the wooden-vehicle industry discussed last week at Chicago the advisability of bringing to the attention of the general government the necessity of devising means to combat insects destroying hickory trees throughout the country. Hickory wood is essential to vehicle construction, and a manufacturer of Evansville, Ind., says there are now but three States from which supplies may be drawn, and that hickory trees in those States are dying off.

Will Want Hardwood.

The Eagle Manufacturing Co. of Wilmington, N. C., will probably want prices on all kinds of hardwood.

Lumber Notes.

About 65 per cent. of the lumber output of Tennessee was handled through Nashville in 1904.

Samuel R. Sell of Johnson City has purchased 400,000 feet of yellow-pine timber near Limestone, Tenn.

The daily capacity of lumber mills on the Beaumont-Dallas branch of the Texas & New Orleans Railroad is 1,230,000 feet.

Three carloads of cedar logs passed through Nashville, Tenn., last week en route to Pensacola for export to Rotterdam.

A party of lumbermen representing principally the Kirby Lumber Co. inspected last week the mills and the pine forests of Eastern Texas.

Col. A. M. Shook of Nashville has been elected president of the recently-organized Southern Timber & Mining Co., which is capitalized at \$100,000.

The increasing number of inquiries for cross-ties and other railroad material at

Beaumont indicates plans for extensive construction during the coming year.

The McShane Lumber Co., which has a mill on the Santa Fe road between Bragg and Saratoga, has closed a deal for 50,000,000 feet cypress timber near Lake Charles, La.

Lumber manufacturers in the Charleston (S. C.) section have provided against a possible scarcity of timber this winter by having their logs brought down the rivers a little earlier than usual.

Mills in Eastern Texas which have been operating under an agreed curtailment of one-third in production since July 1 will resume full time on January 1, and it is thought that some of them will not be able to avoid overtime.

Representatives of railroad companies were invited to witness this week tests of the Rueping method of creosoting wood at the Texarkana plant of the International Creosoting & Construction Co. of Galveston, Texas.

S. M. Standley has obtained the privilege for \$12,500 of cutting the timber on 2500 acres of land two miles from Valdosta, Ga. The price of the privilege is greater than that brought by the land and all on it 10 years ago.

Shipments of pine lumber during the month of November from the Mississippi and Wisconsin valleys amounted to 186,286,738 feet, as against 153,446,801 feet in 1903. For 11 months of the current year the shipments amounted to approximately 1,965,000,000 feet, as compared with 2,000,000,000 feet for a like period in 1903.

Wants Arguments for Immigration.

Mr. W. W. Johnson, secretary Chamber of Commerce, Union, S. C., writes to the Manufacturers' Record as follows: "I want arguments and statistics going to show the benefits derived by other sections of the country from imported labor. There is a settled prejudice in the minds of our farmers against foreign labor. My idea is that the frequent publication in the county papers of arguments and figures tending to show the good done by such labor will do something, at least, towards removing this ignorant objection on the part of our landowners."

"Historic and Picturesque South Carolina" is the title of an attractive pamphlet issued by the Chamber of Commerce of that city, with special reference to the advantages of Charleston as a winter resort.

The Cumberland Telephone & Telegraph Co. is preparing to spend \$125,000 in adding to its facilities in Memphis, Tenn. The company will construct new lines in Mississippi and Louisiana.

The funding board of the State of Tennessee has purchased and cancelled during the last two years \$615,500 of Tennessee State bonds at a cost of \$595,730.

The seventeenth annual convention of the Retail Dealers' Hardware and Implement Association of Texas will be held at Dallas January 24, 25 and 26.

The Carolina Portland Cement Co. of Charleston has received a contract for fire-brick made at Killian, S. C., to be shipped to Tolosa, Mexico.

During the year ended June 30 last 8260 miners produced 3,320,057 tons of coal in Indian Territory.

Forty white miners from New York have gone to work in the Pratt City (Ala.) coal mines.

The 250 cigar factories in Kentucky used last year more than 1,000,000 pounds of tobacco.

MECHANICAL

The Wilkinson Steam Turbine.

Editor Manufacturers' Record:

The development of the steam turbine is perhaps the most important work in mechanics. The successful inventor and designer of the steam turbine has for his problem not the mysteries of physics

successful this will create no less a sensation than have the stationary and marine types. Illustrations of Wilkinson turbines are presented herewith.

Generally speaking, the Wilkinson turbine is of the impact, axial-flow type, having an inner casing formed by the abut-

a well-known manner to convert a fraction of the pressure of the steam into energy of mass and velocity, which is discharged against rotating buckets mounted upon bucket wheels, one of which is disposed within each stage or compartment. As the steam passes through the turbine

ham, Ala., intends to build and market the Wilkinson turbines.

J. M. DEWBERRY.
Birmingham, Ala.

American Goods in England.

Mr. Walter P. Notcut, 19-20 Holborn Viaduct, London, E. C., who represents in England a limited number of American manufacturers of general hardware, woodenware, etc., informs the Manufacturers' Record that he proposes to visit the United States shortly, arriving at New York about January 1, and he is anxious to get in communication with American manufacturers of the lines which he represents. He adds:

"It may interest us to know that there is a growing demand for American manufactured goods in this market provided the manufacturers themselves are willing to adopt the British methods of sales and not be too hard and fast in running their business in Great Britain on the same lines as they adopt in the States."

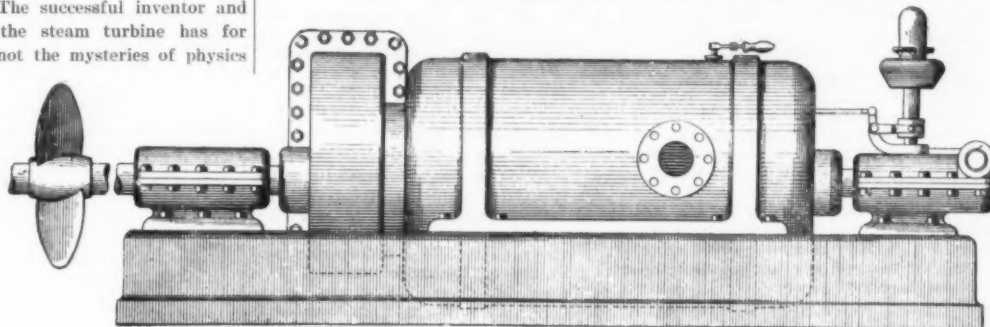
Mr. Notcut says that the old method of supplying the English trade through the New York export houses is fast dying out, and that the best houses in England prefer to buy their goods from American manufacturers who will deal directly with them. He suggests that as the financial standing of the majority of business houses in England is in every way equal to that of American firms, there should be no reason why all American manufacturers of note should not be represented in England directly, either by their own travelers or preferably by a resident representative.

American manufacturers desiring to communicate with Mr. Notcut while he is in this country may direct their letters to the care of the Manufacturers' Record, Baltimore, Md.

Cotton for Norway.

Jens Thorne of No. 3 Elisenbergveien, Christiania, Norway, writes to the Manufacturers' Record as follows: "I will be obliged if you could give me some addresses of cotton exporters who you think would take up our market. It is best to get a firm who could send the goods from stocks in New York, with which port we every week have direct steamer connection. We now mostly are getting our cotton through Liverpool makers, but the Americans ought to do this business themselves. The Norwegian import alone is amounting to about 3000 tons a year. The brands used here are "Fully," "Middling," "Texas," "New Orleans," good color and staple most free from leaf; commission 2½ per cent."

The Chamber of Commerce, an industry of Raleigh, N. C., is circulating a beauti-



WILKINSON STEAM TURBINE.

unraveled by intricate and delicate machinery, but rather the application of the plainest laws by the simplest mechanism. The word turbine is derived from turbinis, and means that which whirls or turns on an axle. The boys' "flutter mill" is a turbine where the power is falling water striking the ends of the blades. The "windmill" is a turbine where the power is a current of air striking the blades on an angle. The well-known water-wheel is a turbine where the power is flowing or falling water striking buckets or curves on the rim of the wheel. The steam turbine is simply a wheel with buckets on the periphery where the power is steam flowing against these buckets, thereby forcing the wheel to whirl. In this there is nothing new. Steam turbines have been known and their simplicity and power recognized for 2000 years. The proper control, and hence the economic use of the steam, has been the question, and though a simple question, yet it has puzzled mechanical engineers for 20 centuries. A few seem to have been at least partially successful, and the world is now attracted to this art. The genius of these inventors might have expressed itself in something necessary to the world's advance had they lived in an earlier age, but an earlier development of the steam turbine was practically impossible. Edison had to electrify the world and the reciprocating engine had to be perfected before the world was ready to emphasize the demand for the steam turbine. Electrical generation seems to be its special field, although broad claims are now being made for it for marine and locomotive use.

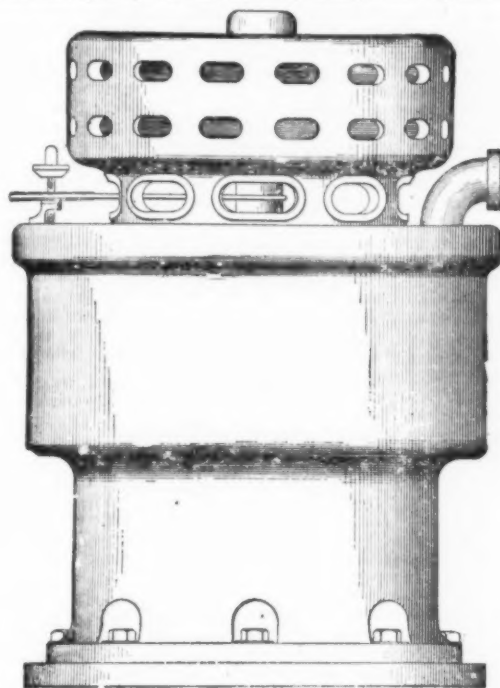
Mr. James Wilkinson, inventor of the Wilkinson turbines, is under 40 years of age, is a mechanical engineer of experience, and his experience as engineer-in-chief at the power plant of Birmingham, Ala., has taught him the exact needs to be met. His types are simple and seem to have a wide range of adaptability. He has many patents covering his work in this and foreign countries, as shown by the official records. These patents relate to three styles, viz.:

1. Stationary, adapted to electric-power plants, pumping stations, blast furnaces and factories.

2. Marine, adapted to ship propulsion, both large and small vessels. Mr. Wilkinson claims that his machines are two-speed and reversible at full efficiency. These claims are attracting much attention from shipbuilders and government navies.

3. Locomotive, adapted to railroad traction. The ability to reverse and reduce speed without loss of efficiency makes it possible to apply the turbine to the locomotive. Mr. Wilkinson has also patented his plan of attaching his turbine to the present styles of locomotives. If suc-

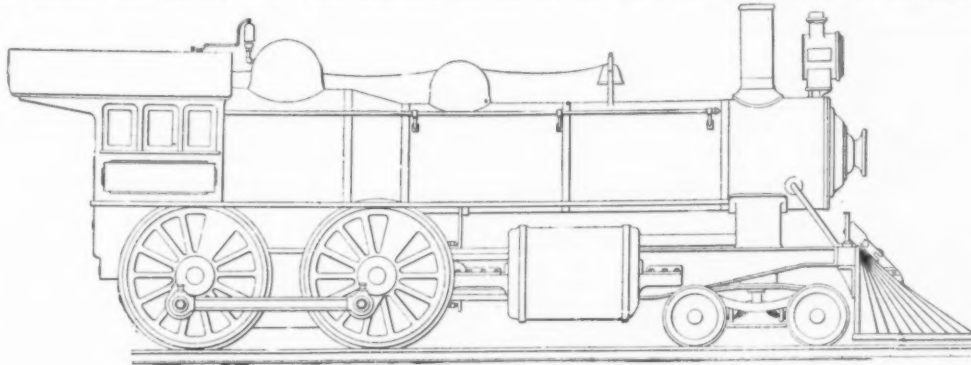
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WILKINSON TURBINE GENERATOR.

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WILKINSON LOCOMOTIVE TURBINE.

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Construction Department

TO OUR READERS!

In order to understand and follow up properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY.

The MANUFACTURERS' RECORD seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

* Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the MANUFACTURERS' RECORD.

ADDRESS FULLY.

To insure prompt delivery of communications about items reported in these columns, the name of one or more incorporators of a newly incorporated enterprise should be shown on the letter addressed to that town, or to the town of the individual sought, as may be shown in the item, as sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. This will help to insure prompt delivery of your communication, although it is inevitable that some failures on the part of the postal authorities to deliver mail to new concerns will occur.

WRITE DIRECTLY.

It is suggested to advertisers and readers that in communicating with individuals and firms reported in these columns, a letter written specifically about the matter reported is likely to receive quicker and more attention than a mere circular.

BALTIMORE BUILDING NOTES.

Business Buildings.

Baltimore—Municipal Buildings.—The Centre Market Improvement Commission, Felix Agnus, chairman, Hoen Building, 302 East Lexington street, has selected Simonson & Pietsch, architects, Hoen Building, 302 East Lexington street, to prepare plans and specifications for municipal buildings to be located on Centre Market Space. The buildings include Maryland Institute, three stories high and covering an area of 23,250 square feet; wholesale fish market, two stories high and covering an area of 25,285 square feet, and wholesale produce market, one story high and covering an area of 44,164 square feet. The city has appropriated \$455,000 for the erection of the buildings. These buildings previously mentioned.

Baltimore—Warehouse.—H. Marcus Denison, 200 East Lexington street, has awarded contract to J. H. Walsh & Bro., builders, 406 South Charles street, for the construction of warehouse to be located at 124 and 126 South street, after plans and specifications by Edward L. Walsh, architect, 406 South Charles street. Structure to be four stories high, 40x130 feet; iron-spotted brick with granite base and galvanized-iron trimmings; concrete foundations; steel beams; cast-iron columns; slag roofing; galvanized-iron cornice and skylight; sanitary plumbing. Electrical work, heating system and elevator not included in contract. Cost to be about \$20,000.

Baltimore—Store Building.—Zion & Co., builders, 1207 East Madison street, have purchased the leasehold interest in the property located at 52 and 54 Centre Market Space from John J. Hurst, 217 Courtland street, and will erect a store building on the site. Structure to be three stories high with basement, 25x55 feet; brick with stone trimmings; concrete foundation; steel beams; tin roofing; galvanized-iron cornice; electric wiring and fixtures; sanitary plumbing; heating system. This building previously mentioned.

Baltimore—Apartment-house.—William L.

Stork, 1010 North Charles street, has purchased the property located at southwest corner of Charles and Franklin streets for about \$55,000, and will erect on the site, which is 59x100 feet, an apartment-house.

Baltimore—Warehouse.—George N. Mackenzie of the C. D. Pruden Co., 331 St. Paul street, has purchased the property located at 109 South Charles street, and has commissioned George N. Mackenzie, third, architect, Builders' Exchange Building, 2 East Lexington street, to prepare plans and specifications for warehouse to be located on the site. Structure to be three stories high, 30x55 feet; brick with stone trimmings; steel beams; galvanized-iron cornice; electric wiring and fixtures; sanitary plumbing.

Baltimore—Warehouse.—Galtner's City & Suburban Express Co., 31 South Howard street, has leased the property located at 407 West Lombard street, which has a frontage of 30 feet, with a depth of 175 feet to King street, where it has a frontage of 60 feet. The King-street property will be improved with a new warehouse and the Lombard-street building will be thoroughly remodeled.

Baltimore—Warehouse.—Further details have been obtained concerning warehouse for the Colonial Trust Co., 13½ West Saratoga street, to be erected at 3 Hanover street after plans and specifications by Ellicott & Emmart, architects, Union Trust Building, Charles and Fayette streets. Structure to be five stories high with basement, 20x70 feet; red and gray brick with galvanized-iron trimmings; granite base; concrete foundation; steel beams; slag roofing; galvanized-iron cornice and skylight; metal frames and sashes glazed with wireglass; vault lights; electric wiring and fixtures; sanitary plumbing. Heating system and elevator not included in contract. B. F. Bennett, 123 South Howard street; Charles L. Stockhausen, National Marine Bank Building, Gay and Water streets; J. H. Miller, 110 Dover street; Edward D. Preston, 140 West Fayette street; John Cowan, 106 West Madison street; Charles McCauley Company, 123 West Saratoga street; Henderson & Co., Ltd., 218 West Fayette street, and A. J. Robinson Company, 30 West Franklin street, have been selected to estimate on the construction. Date for submitting estimates will be announced later.

Baltimore—Store Building.—Louis Kaufman & Sons, Gay and Forrest streets, have commissioned Louis Levi, architect, Union Trust Building, Charles and Fayette streets, to prepare plans and specifications for store building to be located at corner of Gay and Forrest streets. Structure to be five stories high, about 30x60 feet; brick with terra-cotta trimmings; concrete foundations; electric wiring and fixtures; sanitary plumbing; steam-heating system; elevator, cash-carrier system; cost to be about \$20,000.

Baltimore—Office Building.—George S. Cooper, architect, 1412 G street N. W., Washington, D. C., has been commissioned to prepare plans and specifications for office building to be located at northwest corner of Baltimore and Calvert streets, for which Chas. Gilpin, builder, Union Trust Building, Charles and Fayette streets, has the contract for construction. Structure to be 15 stories high with basement, 102x104 feet; light brick with granite for the first three stories and terra-cotta for three upper stories; steel frame fireproof construction; slag roofing; terra-cotta cornice; electric wiring and fixtures; sanitary plumbing; steam-heating system; electric passenger elevators; electric generating plant. This building previously mentioned.

Baltimore—Warehouse.—Further details have been obtained concerning warehouse for Frank Brown, 820 North Charles street, to be erected at 418, 420, 422 and 424 East Pratt street, after plans and specifications by Henry Brauns, architect, 113 West Saratoga street. Structure to be two stories high, 67x93 feet; brick with stone trimmings; concrete foundations; steel beams; cast-iron columns; slag roofing; galvanized-iron cornice; electric wiring and fixtures; sanitary plumbing; heating system. B. F. Bennett, 123 South Howard street; J. H. Miller, 110 Dover street; J. J. Walsh & Son, 1525 Maryland avenue, and John Hiltz & Son, 3 Clay street, have been selected to estimate on the construction. Estimates to be in January 5.

Baltimore—School.—The Municipal Board of Awards, City Hall, has awarded contract to C. Sheehan & Son, builders, 117 East Centre street, for the construction of school building to be located at corner of Hollins and Amity streets, after plans and speci-

cations from the office of the Inspector of Buildings, City Hall. Structure to be two stories high with basement, 54x78.4 feet; brick with galvanized-iron trimmings; concrete foundation; steel beams; tin roofing; metal ceilings; gas fixtures; sanitary plumbing. Heating system not included in contract. Cost of building to be \$17,425. This building previously mentioned.

Baltimore—Hotel.—Further details have been obtained concerning hotel for the Caswell Hotel Co., 601 Union Trust Building, Charles and Fayette streets, to be erected at northeast corner of Baltimore and Hanover streets, after plans and specifications by Mulliken & Moeller, architects, 7 West 38th street, New York, and contract for the construction of which has been awarded to Charles Gilpin, builder, 601 Union Trust Building, Charles and Fayette streets. Structure to be seven stories high with basement, 68.7x149.5 feet; iron-spotted brick with granite base and terra-cotta trimmings; concrete foundation; steel-frame construction, fireproofed with hollow tiling; slag roofing; galvanized-iron cornice; fire-escape; three ornamental iron marquises glazed with wireglass; iron stairways; steel or boiler iron stack; vault lights; 10 galvanized-iron skylights; Kalamen work; reinforced concrete sidewalk, roof, basement, first floor, public halls and bath and toilet-rooms; interior marble work; Terrazzo and Mosaic floors; fire hose and racks; electric wiring and fixtures; sanitary plumbing; steam-heating system; two electric elevators; one electric pavement lift; one hand pavement lift; engines; two horizontal tubular boilers; one blow-off tank; feed-water heater; hot-water tank; two boiler-feed pumps; two brine pumps; ammonia compressor; condenser; brine and ice tank; two cedar roof tanks of 2000 gallons capacity; 14 refrigerators. The builder invites subbids on all materials to be used in the construction of the building. Plans and specifications can also be seen at the builder's office in the Pennsylvania Building, Philadelphia, Pa.

Manufacturing Buildings and Other Enterprises.

Baltimore—Artificial-stone Plant.—The Standard Stone Manufacturing Co., John G. Schwind, president, 302 Fidelity Building, Charles and Lexington streets, will erect building to be located at Gwynn's Falls and Franklin street. Structure to be one story high, 80x150 feet; frame construction; galvanized-iron roof.

Baltimore—Shoe Factory.—David Glickman and Jacob Blum, proprietors of the Red Star Shoe Manufacturing Co., 609 North Paca street, have purchased the property located at 414 West Hoffman street. The site is improved with a three-story building 25x168 feet, which will be altered to suit its purposes.

Baltimore—Laundry Building.—The Municipal Board of Awards, City Hall, has awarded contract to Felix McGinnity, builder, 827 East Chase street, for the construction of laundry building to be located at Bayview Asylum at his bid of \$3650.

Baltimore—Mantel Factory.—The Broadbent-Davis Mantel Co., Canton avenue and President street, has awarded contract to J. J. Walsh & Son, builders, 1525 Maryland avenue, for the construction of dryhouse to be located at President and Alliceanna streets, after plans and specifications by Tormey & Leach, architects, 325 St. Paul street. Structure to be one story high, 15x82 feet; brick; slag roofing; galvanized-iron cornice; sanitary plumbing; steam-heating system; cost to be about \$3000.

Baltimore—Refining Company.—The W. H. Daugherty & Son Refining Co. has been incorporated, with an authorized capital stock of \$100,000, by Jesse M. Heinemann, 2208 Eutaw Place, Robert Wynn and Sylvan H. Lauchheimer, 224 St. Paul street.

Baltimore—Fruit Company.—The W. E. Jones Co. has been incorporated, with an authorized capital stock of \$15,000, for dealing in fruits of all kinds, by Wm. E. Jones, 9 North Fulton avenue; John Henderson, Robert L. Porter, 15 West Pratt street; U. G. Border, 212 Light street, and Randolph Barton, Jr.

Baltimore—Ice Plant.—John W. McKinnon, Chicago, Ill., has purchased for \$21,000 plant No. 1 of the Hammond Ice Co. at York, William and Johnson streets, subjected to a bonded indebtedness of \$250,000. Mr. McKinnon will put the machinery of the plant in good condition and operate it.

Baltimore—Stone Works.—The Mullan-Har-

rison Company, stone and marble works, 1422 Belvidere street, recently reported as having been incorporated, will erect building to be located at 400 North Paca street, after plans and specifications by Henry J. Tinley, architect, 421 St. Paul street. Structure to be two stories high with basement, 18x35 feet; brick with stone trimmings; concrete foundation; steel beams; cast-iron columns; tin roofing; galvanized-iron cornice; electric wiring and fixtures; sanitary plumbing; heating system. James F. Farley, 17 North Frederick street; Monmonier & Sorrell, 308 Laurens street; Jacob Peters, 411 St. Paul street; Russell Construction Co., 17 East Saratoga street, and James C. Smith, 1601 North Broadway, have been selected to estimate on the construction. Estimates to be in January 3.

Subbids Wanted.

Mention of contractors wanting subbids on construction work and material will be found, when published, in the "Machinery Wanted" column on another page under the heading of "Building Equipment and Supplies."

ALABAMA.

Anniston—Foundry and Machine Shop.—The Adair Machine Works Co. has changed its name to the Anniston Foundry & Machine Co. and increased capital from \$7000 to \$12,000. H. B. Rudisill has been elected president and manager; E. T. Fields, vice-president; E. L. Turner, secretary-treasurer, and G. D. Adair, superintendent. The plant is being equipped with machinery for the manufacture of coal and ore shovels, water-works supplies, etc.

Birmingham—Street Paving.—Nashville (Tenn.) Roofing & Paving Co. has contract to pave a portion of Highland avenue with bituminous macadam.

Birmingham—Sand, Lime, Brick and Stone Works.—Birmingham Sand, Lime, Brick & Stone Manufacturing Co. has increased capital from \$30,000 to \$37,000.

Elmore—Lumber Company.—C. A. Zeigler, H. T. Simmes and A. L. Goldbery have incorporated the Zeigler Lumber Co. with \$20,000 capital.

Gadsden—Beverage Factory.—E. H. Cross, previously reported as to erect building 25x30 feet, which would be equipped for the manufacture of soda-water beverage, has let contract for building to W. T. Christopher.

Huntsville—Blacksmith Shop.—It is reported that Overton Bros. will rebuild blacksmith shop recently burned.

Montgomery—Shoe Company.—Incorporated: Noble, Goode & Taylor Shoe Co., with \$12,000 capital, by Ben Noble, Hunt Taylor and Bryant Goode.

Opelika—Telephone System.—J. L. Renfro has applied for franchise to construct and operate automatic telephone system.

ARKANSAS.

Camden—Electric-light Plant.—A company has been organized with J. A. Trawick, president, and J. A. Van Eiten, secretary (both of Little Rock, Ark.), to operate the Camden Electric-light Plant, recently purchased.

Clarksburg—Coal-mining.—Eureka Anthracite Coal Co. has purchased at \$100,000 the coal properties of the Northwestern Anthracite Coal Co., which will be improved and operated on an extensive scale. New shafts will be sunk and 100 miners' houses erected. John C. Hill is president of the company; A. M. McKennon, vice-president, and C. L. Pyle, treasurer and general manager.

De Queen—Water-works.—It is reported that franchise has been granted for the installation of water-works. J. A. Wommack is mayor.

Fayetteville—Mining.—G. W. Chase, J. W. Massengale, H. K. Wade, L. W. Gregg and J. H. McElroy have incorporated the Rush Creek Mining Co. with \$35,000 capital.

Fort Smith—Power-house, etc.—Reports state that the Fort Smith Electric Street Railway Co. contemplates expending \$180,000 in improvements, including the erection of power-house and the development of oil properties.

Hot Springs—Hardware Company.—C. C. Rose, G. H. Lyon and E. R. Johnson have incorporated the Johnson Hardware Co. with \$25,000 capital.

Little Rock—Ice Company.—Incorporated: Crystal Ice Co., with \$75,000 capital. W. C. Drake is president; J. A. Kendall, vice-president, and J. L. Clark, secretary-treasurer.

Ogden-Lumber Company.—J. F. Fry & Son Lumber Co. has been incorporated with \$50,000 capital by James H. Hillis, D. C. Fuller, J. F. Fry, E. L. Fry and Frank Stephens.

Pettigrew-Mercantile.—John K. Pool and others have incorporated the Pettigrew Mercantile Co., with \$18,000 capital.

Tuckerman-Mercantile.—Harvey Greenhaw Mercantile Co. has been incorporated with \$40,000 capital by S. W. Harvey and others.

FLORIDA.

Daytona-Sewerage System.—A. S. Tuttle, consulting engineer, New York, N. Y., has been engaged to prepare estimates, plans, etc., for proposed sewerage system.

Eustis-Gas Plant.—It is reported that P. A. Ross and J. R. Miller have secured franchise to erect acetylene-gas plant.

Jacksonville—Beverage Factory.—Coco Phosphate Co. has been organized with P. A. Holt, president; J. F. Snelling, vice-president and general manager; Lyman Wells, secretary, and Gustav Miller, treasurer, for the manufacture of Coco phosphate; office, 916 West Bay street.

Pensacola-Foundry and Machine Shop.—Pensacola Iron Works & Supply Co. has been incorporated, with \$10,000 capital, to manufacture and deal in machinery, boilers, etc. W. B. Wright is president; Gus Eitzen, vice-president; H. A. Brosnham, secretary, and W. DeC. Kessler, treasurer.

St. Augustine-Street Paving.—City will expend \$15,000 in paving certain streets with vitrified brick. Address The Mayor.

Tallahassee—Mercantile.—D. G. Mallory and associates have incorporated the Perry Grocery & Supply Co. with \$10,000 capital.

GEORGIA.

Atlanta-Soda-water Appliances.—Incorporated: William A. Harris Manufacturing Co., with \$10,000 capital, by William A. Harris, Thomas L. Bishop and associates, to manufacture soda-water appliances.

Atlanta-Manufacturing.—Hunt Automatic Time Lamp Co. has incorporated, with \$100,000 capital, to manufacture the Hunt automatic time lamp; incorporators, J. C. Hooten, T. W. Hunt and E. T. Williams.

Atlanta-Real Estate.—J. M. Dugger, H. C. Caldwell and W. A. Hancock have incorporated the Atlanta Land Co., with \$100,000 capital.

Augusta-Cotton Mill.—Negotiations are in progress for establishing a cotton factory in a building controlled by Alexander, Johnson & Steiner.

Augusta-Real Estate.—Homeseekers' Investment Co. has been organized with W. M. Jackson, president; J. M. Cranston, vice-president, and Horace Castles, secretary-treasurer, to divide 6000 acres of land in North Augusta into building lots.

Calro—Water-works and Electric-light Plant.—City will vote January 25, 1905, on the issuance of \$10,000 of bonds for water-works and \$5000 for electric-light plant. Address The Mayor.

Canton-Sewerage System.—City has voted against the proposed bond issue for the construction of sewerage system. Address The Mayor.

Dalton-Canvas-goods Factory.—The M. D. & H. L. Smith Manufacturing Co. has installed machinery for increasing capacity. It is stated that the company will erect factory building next year.

Fairburn-Hosiery Mill.—The Fairburn Hosiery Mills, reported incorporated last week, has capital of \$25,000, \$7500 being paid in. It has equipped a plant with 15 knitters, etc., for the production of hosiery. H. L. Roan is secretary.

Macon-Mixing Plant.—Jones & Roberts Fertilizer Works, reported incorporated last week with \$5000 capital, is erecting building 30x110 feet, to be utilized as mixing plant; capacity, 10,000 tons.

Savannah—Electric-light Plant.—Herman Myers, mayor, states there is no truth in the report mentioned last week that the city had under consideration the erection of electric-light plant.

Savannah-Shipbuilding Plant.—It is reported that the Paulsen Company will establish shipbuilding plant on Hutchinson's Island.

Valdosta—Timber Land.—Reports state that Coppage & Smith have purchased the timber rights on 2500 acres of land near Valdosta.

KENTUCKY.

Ashland-Coal Company.—Rankin Coal Co. has been incorporated, with \$100,000 capital, by John F. Hager, S. S. Willis, A. M. Kelly of Ashland, John C. C. Mayo of Paintsville, Ky., and W. F. Hite of Huntington, Va.

Berea-Real Estate.—Berea Real Estate & Development Co. has been incorporated, with \$10,000 capital, by W. H. Porter, A. W. Porter and P. Cornelius.

Burnside-Publishing.—E. M. Shelly, J. H. Van Hook of Burnside and J. H. Shearer of Monticello, Ky., have incorporated the Mountaineer Publishing Co., with \$6000 capital.

Dixon-Coal-mining.—Caney Fork Coal & Mining Co. has been incorporated, with \$75,000 capital, by F. M. Baker, R. L. Jackson and C. A. Doris.

Harrodsburg-Distillery.—John B. Thompson, Phil B. Thompson and D. M. Thompson have incorporated the Old Jordan Distilling Co., with \$100,000 capital.

Henderson—Furniture Company.—Levy Furniture Co. has been incorporated with \$10,000 capital.

Hopkinsville-Bed Factory.—M. V. Dulin, M. F. Crenshaw, J. F. Ganett, R. E. Cooper, T. W. Blakey, R. H. Holland, C. F. Jarrett and Walter M. West will incorporate the Kentucky Bed Co., with \$4000 capital, to manufacture beds, especially a folding bed patented by A. W. Pyle.

Louisa—Furniture Factory.—Cincinnati capitalists contemplate the establishment of \$100,000 furniture factory. M. S. Burns of Louisa, Ky., can probably give information.

Louisville—Farm-land Company.—W. S. Adams, T. J. Howe of Louisville and T. J. Ramsey of Shelbyville, Ky., have incorporated the Farm Land Co., with \$16,000 capital.

Louisville-Oil and Gas Wells.—Jefferson County Oil & Gas Co. has been incorporated, with \$100,000 capital, by T. P. Bayse, J. B. Murphy and Arthur Kaye.

Louisville-Sewerage System.—J. B. F.

New Orleans-Real Estate.—Crescent Building Co., Ltd., has been incorporated with \$100,000 capital to take over the business of the Crescent Home Building Co., Ltd. Otto T. Maier is president; Edward H. Purcell, vice-president, and Ed J. Heintz, secretary-treasurer.

MARYLAND.

Cumberland-Coal-mining.—Ferdinand Williams, James A. Milholland of Cumberland, Isaac Bradburn of Lonaconing, Md.; William Del. Walbridge and William B. Crisp of New York, N. Y., have incorporated the Semibituminous George's Creek & Cumberland Coal Co., with \$50,000 capital.

Cumberland-Coal Mines and Coke Ovens. Maryland Coal Co. has been incorporated, with \$50,000 capital, by James A. Milholland, Ferdinand Williams of Cumberland, Isaac Bradburn of Lonaconing, Md.; William Del. Walbridge and William B. Crisp of New York, N. Y., to mine coal, manufacture coke, etc.

Havre de Grace-Sewerage System.—Williams & Whitman, 902 Whitehall Building, Battery Park Place, New York, N. Y., who made the surveys and designed the system of sewerage (contract for the first section of three and one-third miles reported last week as having been let to F. E. Schneider & Co., 203½ St. Paul street, Baltimore, Md.), have also been engaged for the work of supervising and engineering said system. The plans call for two more sections to be let at a future date, one section about as large as the present letting and one including a four-foot trunk, which runs considerably more.

Pikesville—Distillery.—Winand Distilling Co. has let contract to J. Henry Miller, 119 Dover street, Baltimore, Md., for the erec-

Montpelier—Telephone System.—Clay County Telephone Co. has been incorporated with \$1000 capital.

Nettleton—Supply Company.—Nettleton Supply Co. has been incorporated, with \$25,000 capital, by W. M. Mayfield and others.

Shuqualak-Cotton Mill.—A. M. Tynes, who recently bought the Hashuqua Manufacturing Co.'s cotton-mill property, will remove the plant to some city on railway and there operate by steam, power for which will be needed later. There are 1500 spindles and 40 looms in the equipment, also apparatus for making rope.*

MISSOURI.

Cape Girardeau-Sewerage System.—City has voted affirmatively the proposed bond issue for the construction of sewerage system. Address The Mayor.

Carrollton-Ice and Cold Storage.—Ice & Cold Storage Co. has been incorporated, with \$10,000 capital, by P. L. Trather, Herndon Ely and T. L. West.

Carthage-Mining Company.—Double Quick Mining Co. has been incorporated by L. L. Ashcroft, L. C. Whitaker, Robert Orenduff and others; capital \$6000.

Joplin-Mining.—Incorporated: M. & R. Mining Co., with \$50,000 capital, by W. H. Frickleton, P. A. Cummings, C. M. McCurdy and others.

Joplin-Mining.—Smithfield Mining Co. has been incorporated, with \$30,000 capital, by N. T. Ball, M. Jacobs, E. G. Fetty and others.

Kansas City-Lumber Company.—H. M. Lee, F. P. Lyman and P. C. Lee have incorporated the Lee & Lyman Lumber Co., with \$40,000 capital.

Kansas City-Woolen Mill.—It is proposed to establish a large woolen mill, and the promoters are conferring with J. F. McAfee of the Topeka Woolen Mills, Topeka, Kan.

Kansas City-Distillery.—Harvey Distilling Co. has been incorporated, with \$5000 capital, by John Sawyer, Walter Schaefer and J. F. Rugg.

Kansas City-Wallpaper Company.—George P. Paton, Mary E. Paton, W. F. Anderson and others have incorporated the George P. Paton Wallpaper Co., with \$30,000 capital.

Kansas City-Shoe Company.—Incorporated: Bond-Radford Shoe Co., with \$75,000 capital, by George A. Bond, Emma Bond and Clarence Radford.

Kansas City-Construction Company.—Todd Conway Concrete Construction Co. has been incorporated, with \$2000 capital, by N. C. Todd, Wm. Conway and E. M. Todd.

Kansas City-Sand Company.—F. W. Crabtree, A. H. Hoge, T. S. Bellamy and others have incorporated the Central Sand Co., with \$5000 capital.

Kansas City-Supply Company.—M. C. Gekeler, T. Nevel and Matilda Nevel have incorporated the High Hill Supply Co., with \$20,000 capital.

Kansas City-Natural-gas Mains.—City has granted 30-year franchise to William Huttig, C. A. Braley, H. D. Train of Kansas City, John Cudahy, John F. Harris of Chicago, Ill., and J. E. Mundy of Chanute, Kan., to lay, acquire and maintain pipes for supply of natural and manufactured gas to the city.

Poplar Bluff-Foundry.—Reports state that a company has been organized to establish plant for the manufacture of fans, blow-pipes, furnace feeders and other devices used in conveying dust and shavings in mills and woodworking factories. Charles Faerber, Shreveport, La., is manager.

St. Louis-Realty Company.—Francis A. Drew, Alphonso C. Stewart, Dan G. Tutt, Charles H. Anderson and associates have incorporated the Vinita Realty Co., with \$155,000 capital.

St. Louis-Advertising Company.—J. L. Lewis Advertising Co. has been incorporated, with \$10,000 capital, by J. L. Lewis, Arthur Kunze and J. M. Lewis.

St. Louis-Lead Company.—Incorporated: Valley White Lead Co., with \$250,000 capital, by F. H. Ludington, Frank Orff, J. H. Montgomery, E. K. Ludington and A. L. Y. Orff.

St. Louis-Paint Company.—Scholl & Schulz Paint Co. has been incorporated, with \$10,000 capital, by Anthony J. Scholl, Rudolph and D. Schulz, to deal in paints, etc.

St. Louis-Construction.—William K. Kavanaugh, James Y. Lockwood, Albert T. Fisher, Frederick Essen and John B. Clayton have incorporated the Big River Construction Co., with \$2000 capital.

St. Louis-Stock Farm.—Iron Mountain Stock Farm Co. has been incorporated, with \$50,000 capital, by William H. Smollinger, Francis K. Fitzgibbon and Samuel M. Woodard, to conduct a stock farm.

St. Louis-Trunk Factory.—Fred Herkert

AGGRESSIVE ADVERTISING AND THE RESULT.

CAROLINA PORTLAND CEMENT CO.,

Manufacturers, Importers, Selling Agents and Dealers in Portland Cement, Portland Cement, Rosendale Cement, Calcined Plaster, Hard Wall Plaster, Lime, etc., Hair, Sand, T. C. Pipe, Roofing Paper, Fire-Brick and Clay.

Charleston, S. C., December 14, 1904.

Manufacturers' Record Publishing Co., Baltimore, Md.:

Gentlemen—In regard to renewing our yearly contract for the advertisement we are now carrying in your *Daily Bulletin*, request that at the expiration of our present contract, which we believe is early in January, that you increase this space by double—four inches instead of two, as heretofore.

We are gratified at the results of our first year's advertisement in your *Daily Bulletin*, and hope that the increased space that we are now taking will benefit us in proportion. We attribute considerable business to our advertisement with you, and while the service is expensive, we feel amply repaid by the results.

Yours truly,

CAROLINA PORTLAND CEMENT CO.,

FRANK C. FORD, Second Vice-President and Assistant Manager.

Breed, city engineer, is preparing plans for the construction of sewerage system, for which bonds were previously reported voted.

Louisville—Tobacco Company.—Incorporated: Axton-Fisher Tobacco Co., with \$64,000 capital, by M. D. Oswald of Louisville, W. F. Axton of Owensboro, Ky., and G. H. Fisher of Shelbyville, Ky.

Louisville—Portland-cement Plant.—The Kosmos Portland Cement Co., recently reported incorporated, is now building its plant located near Louisville, and will start manufacturing with a daily output of 1250 barrels of cement. This capacity will be doubled soon. Samuel Horner, Jr., of Philadelphia, Pa., is the principal owner of the enterprise, and R. C. Carpenter of Ithaca, N. Y., is the consulting engineer. The company can be addressed care of Mr. Horner at Philadelphia.

LOUISIANA.

Amesville—Ferry.—Chartered: Amesville Ferry Co., with \$15,000 capital, by E. Constantine, Auguste Bragard, L. H. Marrero, Sr., L. H. Marrero, Jr., and associates, to operate ferry between Amesville and New Orleans, La.

Lake Charles-Saw and Shingle Mill.—Reports state that F. W. Dearborn, representing the McShane Lumber Co. of Saratoga, Texas, has purchased 50,000,000 feet of cypress timber about 18 miles from Lake Charles, and will at once erect saw and shingle mill.

New Orleans-Machine Shop.—Willmot Machinery Co. has been incorporated, with \$50,000 capital, by W. G. Willmot and associates, to manufacture machinery, tools, etc.

New Roads-Water-works.—City has engaged an engineer to prepare plans and specifications for water-works system, for which \$14,000 of bonds were previously reported voted. Address The Mayor.

tion of two buildings to replace structures reported burned last week at a loss of \$15,000.

MISSISSIPPI.

Aberdeen—Water-works. Electric-light Plant and Sewerage System.—The city council has authorized the issuance of \$80,000 of bonds for the construction of water-works, electric-light plant and sewerage system; J. M. Acker, mayor.

Aberdeen-Cottonseed-oil Mill.—J. W. Taylor, J. M. Boone, F. M. Curlee and associates have incorporated the Aberdeen Cotton Oil Co. with \$75,000 capital to operate cottonseed-oil mill.

Clarksdale—Ice and Bottling Plant.—Clarksdale Ice & Bottling Co. has been incorporated with \$25,000 capital.

Cruger—Mercantile.—Cruger Commercial Co. has been incorporated, with \$20,000 capital.

Houston—Electric-light Plant.—Reports state that the town is considering the erection of electric-light plant. Address Town Clerk.

Houston-Handle Factory.—Dispatches state that the International Handle Co. is rebuilding that portion of its plant recently reported burned.

Jackson-Pearl-button Factory.—A pearl-button factory is being established, and Carl J. von Seutter will be manager.

Macon-Water-works.—City has engaged Edward J. O'Beirne of Memphis, Tenn., as engineer in charge of water-works system, for which \$30,000 of bonds were previously reported voted.

Meridian—Cotton Company.—R. G. McCants Cotton Co. has been incorporated with \$15,000 capital by Robert G. McCants, Geo. W. Neville, Stephen M. Weld, Robert C. Cairns and C. H. Jones.

of the Herkert & Meisel Trunk Co. has purchased site on which to erect five-story building to be equipped as trunk factory.

St. Louis—Real Estate.—Incorporated: Mt. Vernon Realty & Improvement Co., with \$15,000 capital, by Thos. W. Purcell, John Manion, Henry F. Lucy, Owen McNamee and associates.

NORTH CAROLINA.

Charlotte—Duck Clothing Factory.—D. A. Tompkins, I. D. Leath, I. S. Myers, L. A. Dodsworth and associates have incorporated the Charlotte Duck Clothing Co., with an authorized capital of \$50,000, to manufacture all kinds of duck clothing.

Charlotte—Grocery.—Chartered: Morrow Grocery Co., with \$100,000 capital, by R. A. Morrow, J. M. Morrow, J. L. Morrow and others.

Charlotte—Handkerchief Factory.—The Charlotte Handkerchief Manufacturing Co., reported organized last week, will invest from \$5000 to \$35,000. It will occupy a 36x78-foot building and make 300 dozen handkerchiefs per day, probably adding other lines later; offices at Nos. 24 and 26 West 5th street.*

Cornellus—Knitting Mill.—R. J. Stough, P. A. Stough, F. C. Sherrill and J. B. Cornellus will organize a company with capital of \$30,000 to establish a knitting mill.

Edenton—Grocery Company.—Julian Wood and associates have incorporated the Edenton Grocery Co. with \$10,000 capital.

Leaksville—Grocery Company.—Incorporated: Leaksville-Spray Grocery Co., with \$10,000 capital, by J. H. Moore and associates.

Louisburg—Water-works and Sewerage System.—City is arranging for the construction of water-works and sewerage system, and bids will be received until January 15, 1905. Address T. H. Lacy, secretary.*

Mocksville—Gold Mines.—J. E. Gray, R. E. Armfield and associates, reported last week under Statesville as to develop the Gray gold mines, will operate as the Gray's Gold Mining Co., and will erect building 50x100 feet. W. J. Edwards is engineer in charge, and Pierce Thacker, architect.*

Mt. Olive—Barrels, Fruit Packages, etc.—Bell Lumber Co. will erect building which will be equipped for the manufacture of barrels, fruit packages, etc.*

Raleigh—Publishing.—Chartered: Merchants' Journal Publishing Co., with \$10,000 capital, by Norman H. Johnson and others.

Selma—Cotton-duck Mill.—A company is being organized to have capital stock of \$300,000 and build a mill for the manufacture of cotton-duck bagging for bales and for fertilizer sacks. An equipment of 15,000 spindles and complement of looms is contemplated. M. C. Winston, president of the Bank of Selma, is promoting the enterprise.

Shelby—Monazite Mining.—Reports state that Joseph Tysoe of London, England, has purchased through O. F. Mason of Dallas, N. C., 30 acres of land near Shelby containing monazite deposits of the Campbell Monazite Co., and will at once arrange for the development of same. Mr. Tysoe can be addressed care of Blandy, Mooney & Shipman, 7 Wall street, New York, N. Y.

Statesville—Water-works and Sewerage System Improvements.—City contemplates issuing bonds for extending water-works and sewerage system. Address Mayor Steele.

Tarboro—Water-works, Sewerage and Electric-light Plant Improvements.—Board of Public Works is considering the extension of water-works, sewerage system and electric-light plant; John S. Weddell, treasurer.

Washington—Mercantile.—W. H. Russ and others have incorporated the W. H. Russ Bros. Company with an authorized capital of \$25,000.

Winston-Salem—Timber-manufacturing.—Fogle Bros. Company has been incorporated with an authorized capital of \$125,000 by H. A. Pfohl, F. A. Fogle and W. F. Miller to deal in and manufacture all kinds of timber.

Wilmington—Electric Company.—Southern Electric Co. has been incorporated, with \$25,000 capital, by J. O. Brock, J. M. Hall, L. E. Hall and others.

Wilson—Clothing Company.—J. W. Worthington, H. T. Strouach and D. B. Coshen have incorporated the Hutchings Company, with \$35,000 capital.

Winston—Pillow and Quilt Factory.—P. H. Hanes and associates have incorporated the Universal Manufacturing Co. with capital stock of \$150,000 to manufacture down from feathers and make quilts, pillows and robes.

SOUTH CAROLINA.

Anderson—Gas Plant.—It is reported that a gas plant will be established, and J. D.

Maxwell, Jr., of Spartanburg, S. C., is promoting the enterprise.

Batesburg—Cotton, Fertilizers, etc.—Incorporated: I. Edwards Company, with \$10,000 capital, to deal in cotton, fertilizers, etc., by I. and M. B. Edwards.

Columbia—Development Company.—Mutual Farming & Investment Co. has been incorporated, with \$100,000 capital, by J. B. Weaver, A. E. Jacobs and W. P. Spigener, to develop farming lands.

Columbia—Development Company.—McCown & Clarke Co. has increased capital from \$20,000 to \$40,000.

Columbia—Hyatt Brick Co., previously reported incorporated by J. H. Rodger and others, will operate plant with a daily capacity of 40,000 bricks, and has a capital stock of \$20,000.

Society Hill—Lumber Mill.—W. L. Clements Lumber Co., previously reported as contemplating doubling the capacity of plant, has installed additional machinery which will give an output of 50,000 feet of lumber daily, and will also increase capital stock to \$100,000.

Spartanburg—Cotton-towel Mill.—The Jordan Manufacturing Co., recently reported incorporated with capital stock of \$25,000, has bought site and will at once erect suitable building. Equipment will be 36 looms to start with, making toweling and quilts.

Sumter—Building-block Factory.—H. W. Beall is establishing plant for the manufacture of cement building blocks.*

Sumter—Electric-light Plant.—J. L. Almut represents parties who propose building an electric-light plant; he has petitioned for franchise.

Union—Drug Company.—Duke Drug Co. has been incorporated, with \$10,000 capital.

Yorkville—Knitting Mill.—B. Neely Moore, W. B. Moore, O. E. Williams and others have incorporated the Neely Knitting Mills, with capital stock of \$60,000.

TENNESSEE.

Algood—Oil and Gas Wells.—W. W. Wisdom Oil Co. has been organized at La Grange, Ga., with \$500,000 capital, and W. W. Wisdom, president; W. V. Gray, secretary, and J. F. Askew, treasurer, to drill for oil and gas on 271 acres of land at Algood; main offices, Farrell Building, La Grange, Ga.

Belfast—Canning Factory.—A company has been organized with R. K. Orr, president; R. B. Cummings, vice-president, and J. C. Tate, secretary-treasurer, to establish canning factory.

Camden—Fence Factory.—American Fence Co. has been organized to manufacture and sell a patent metal fence. D. B. Thomas is president, and Dr. E. M. McAuley, vice-president.

Chattanooga—Coal-mining.—C. E. James, C. F. James, D. F. Beckham, I. T. Strong and T. E. Webster have incorporated the Chattanooga Land & Coal Co., with \$25,000 capital, to develop coal lands.

Chattanooga—Implement Works.—Chattanooga Implement & Manufacturing Co. is having plans prepared for the erection of addition to plant.

Chattanooga—Real Estate.—Chartered: Home Company, with \$4500 capital, by T. G. Montague, H. T. Olmstead, R. W. Barr, C. V. Brown and A. M. Trimble.

Chattanooga—Foundry and Machine Shop.—Southern Skeln & Foundry Co., previously reported incorporated to establish plant for the manufacture of wagon skeln, etc., has completed organization with J. G. Johnson, president; James K. Jones, vice-president; H. S. Probasco, treasurer, and G. N. Prentiss, secretary. The company has purchased 16 acres of land on which to erect foundry 75x200 feet, steel fireproof construction; forge shop 60x150 feet, machine and pattern shop, two stories, 60x200 feet; warehouse 60x100 feet. It is also contemplated to increase the size of the plant in the course of a year. G. N. Prentiss, secretary, can be addressed at Chattanooga after January 1.*

Clinton—Nurseries Company.—E. L. Foster, E. F. Foster, J. N. Crowder, W. J. Warwick and A. E. Williams have incorporated the Clinton Nurseries Co. with \$10,000 capital.

Collierville—Mercantile.—A. J. Campbell and associates have incorporated the Collierville Mercantile Co. with \$50,000 capital.

Columbia—Woodworking Plant.—Vaughn Manufacturing Co. has been incorporated, with \$50,000 capital, by H. F. Alexander and associates, to establish woodworking plant.

Knoxville—Lumber and Manufacturing Company.—Knoxville Lumber & Manufacturing Co. has been incorporated with \$25,000 capital by Eugene Galyon, W. L. Adams, P. P. Cubine, W. T. Farmer and others.

Knoxville—Paste and Polish Factory.—International Paste & Polish Co. has increased capital to \$25,000.

Knoxville—Heat-regulating Device.—The Fulton Company, reported incorporated last week with \$50,000 capital, will manufacture a heat-regulating device for hot-water, steam and hot-air house-heating system, and will occupy two buildings, one 28x70 feet and one 20x50 feet.

Memphis—Lumber Company.—R. J. Darnell, A. M. Love, R. J. Wiggs, E. E. Goodlander, T. B. Edgington and E. E. Taenzer have incorporated as R. J. Darnell, Inc., with \$100,000 capital.

Memphis—Telephone System.—Cumberland Telephone & Telegraph Co. will expend \$125,000 in extending and improving its system.

Nashville—Timber and Mineral Land.—Southern Timber & Mineral Land Co., previously reported incorporated with \$100,000 capital to acquire and develop timber and mineral land, has completed organization with A. M. Shook, president; E. H. Hinton, vice-president; A. W. Wills, secretary-treasurer, and S. A. Champion, general manager; offices, Vanderbilt Building.

Nashville—Publishing.—Taylor Publishing Co. has been incorporated, with \$10,000 capital, by Robert L. Taylor, G. S. Lawrence, Allen G. Hall, DeLong Rice and M. T. Bryan.

Nashville—Street Improvements.—City council has passed a resolution providing for the issuance of \$500,000 of bonds for street improvements.

Obion—Electric-light Plant.—Obion Lighting Co. is the name of company recently reported organized by James F. Darnall, J. W. Buchanan, Geo. A. Moore, D. A. Dean, J. E. Trout and others, with \$6000 capital, to construct and operate electric-light plant.

Paris—Telephone System.—Paris Telephone Co. has been incorporated with \$25,000 capital by John B. Thomson, C. P. Hudson, George H. Trevathan, A. L. E. Morton, F. N. Fisher, J. G. Warren and C. D. McGreer. Mr. Warren and associates were previously reported as having secured franchise for the construction of telephone system.

Silver Creek—Pencil Factory.—It is reported that E. C. Tillman, J. G. Coggins and Joseph Beatty will establish pencil factory.

Springfield—Grain Elevator.—A. B. Porter of Porter & Osborn will erect 100,000-bushel elevator at a cost of \$25,000, and bids for the construction are now being invited.

TEXAS.

Amarillo—Beer and Ice Company.—Incorporated: Amarillo Beer & Ice Co., with \$20,000 capital, by W. L. Thompson, A. Davidson of Amarillo and Sam Davidson of Fort Worth, Texas.

Austin—Asphalt Deposits.—Reports state that H. P. N. Gammel and associates are arranging for the development of 60 acres of land containing asphalt deposits near Austin.

Beaumont—Oil Refinery.—Great Southern Refining Co. has been reorganized with L. P. Hammond, president; J. B. Timmons, vice-president; W. S. Timmons, secretary, and Edward J. Bode, treasurer. Company is capitalized at \$250,000, and the plant has a weekly capacity of 1000 barrels of refined oil.

Beaumont—Sewerage System.—Callaghan & Graham are lowest bidders at \$25,836.62, and will probably receive contract for the construction of sewerage system previously reported.

Blooming Grove—Mercantile.—H. M. Allen and associates have incorporated the Lone Star Co. with \$15,000 capital.

Bonham—Cotton Mill.—The Bonham Cotton Mills will expend \$75,000 for additional machinery.

Bonham—Printing.—Incorporated: Favorite Printing Co., with \$10,000 capital. J. M. Terry is president; E. H. Pritchett, vice-president, and Sherwood Spotts, business manager.

Calvert—Cannery.—A canning factory will be established with a daily capacity of 20,000 cans. Address H. L. Stricker, secretary Business League.*

Canadian—Water-works and Electric-light Plant.—The installation of water-works and electric-light plant is being discussed. J. F. Johnson is chairman of committee.

Dallas—Drug Company.—Owl Drug Co. has been incorporated with \$10,000 capital by R. V. Rogers, Z. E. Marvin and B. F. Bridges.

Dallas—Printing Company.—Sam Hargreaves, G. A. Ritchie and W. E. Beatty have incorporated the Hargreaves Printing Co. with \$15,000 capital. This company takes over the printing business of Samuel Hargreaves and will erect three-story brick building.

Dallas—Cigar-box Factory.—Parker Company has been incorporated with \$25,000 capital by W. K. Parker, Shirley Arnold and others to manufacture cigar boxes.

Dallas—Coal Company.—W. Reid, B. R. Smith and H. J. Maersch have incorporated the Reid Coal Co. with \$100,000 capital.

Forney—Hardware and Saddlery.—Farmers' Hardware & Saddlery Co. has been incorporated with \$10,000 capital by W. O. Pinsor, J. M. Davis, Jr., and T. H. Arnold.

Fort Worth—Water-works.—City Engineer Hall is preparing plans for proposed \$100,000 water-works system in North Fort Worth.

Greenville—Bottling Works.—Greenville Bottling & Manufacturing Co. has increased capital from \$10,000 to \$20,000.

Houston—Bottling Works.—American Brewing Association has had plans prepared for the erection of two-story brick building, which will be equipped as bottling works; cost \$10,000.

Longview—Foundry and Machine Shop.—It is reported that R. W. Davis of St. Louis, Mo., will establish foundry and machine shop.

Marlin—Ice and Cold-storage Plant.—Marlin Ice & Cold Storage Co. has increased capital from \$20,000 to \$30,000.

McAllen (not a postoffice)—Townsite.—McAllen Townsite Co. has been incorporated, with \$40,000 capital, by John McAllen of Brownsville, Texas, and associates, to develop McAllen as town.

Mineral Wells—Electric Plant.—Chartered: Mineral Wells Electric, Power & Heating Co., with \$50,000 capital, by D. G. Galbraith of Mineral Wells, William D. Williams of Fort Worth, Texas, and associates, to supply light, heat and power.

Orange—Construction Company.—Orange Construction Co. has been incorporated with \$100,000 capital by W. H. Starks, L. L. Miller of Orange and I. T. Preston of New Orleans, La.

Pecos—Irrigation System.—Toyah Lake Land & Water Co. has incorporated with \$100,000 capital to conduct system of irrigation; incorporators, O. D. Weeks, W. R. Weeks and J. A. Lowe, all of El Paso, Texas.

Seabrook—Oil Wells.—Seabrook Oil Co. has been organized, with J. G. Tod, president; J. B. Williams, vice-president (both of Galveston, Texas); A. N. McKay of La Porte, Texas, treasurer, and W. A. Wheelton, secretary, to drill for oil; capital \$10,000.

Snyder—Hardware Company.—George L. Paxton, W. A. Henderson and Leroy Johnson have incorporated the Paxton Hardware Co. with \$20,000 capital.

Temple—Manufacturing.—Texas Embroidery Co. has incorporated, with \$30,000 capital, to conduct a manufacturing business; incorporators, B. Johnson, O. W. Jones, C. T. Mahler, J. S. Jacobs and L. P. King.

Victoria—Sewerage System.—City will install sewerage system. Address The Mayor.

VIRGINIA.

Benhams—Woodworking Plant.—Odell Bros. are reported to be investigating with a view to establishing woodworking plant.

Harrisonburg—Printing Plant.—Virginia Printing Corporation has been organized with John Garber, president; S. H. Heatwole, vice-president; F. I. Rodgers, secretary, and S. K. Wine, treasurer; capital \$25,000.

Norfolk—Barrel Company.—Chartered: Natural Bridge Barrel Co., to deal in barrels. Harry Watkins is president and general manager, and Mrs. W. L. Benie, secretary-treasurer.

Norton—Coal Mines and Coke Ovens.—Reports state that John A. Essar and associates are arranging for the development of coal mines on the Bruce tract, and to build 100 coke ovens.

Petersburg—Silk Mill.—Dispatches state that August Andreas of Easton, Pa., is contemplating the organization of a stock company to establish silk mill in Petersburg.

Roanoke—Ice Plant.—Reports state that the Virginia Brewing Co. has purchased the ice plants of the Roanoke Cold Storage Co. and the Nottingham Coal & Ice Co., which will be consolidated with the ice plant at present being operated by the Virginia Brewing Co. and the Consumers' Ice Co., organized with \$100,000 capital to operate the plant; Louis A. Schlots and Henry Schlots, managers.

Roanoke—Coal-mining.—Southern Anthracite Coal Co., reported incorporated last week with C. A. Johnston of Christiansburg, Va., president, and A. D. Walton of Roanoke, treasurer, was formed to take over the holdings of the Clear Air Anthracite Co. and the Montgomery Anthracite Coal Co., consisting of 1500 acres of coal land in Price mountain, Montgomery county, which will be further developed; authorized capital \$250,000.

Staunton-Springs Company.—Mt. Elliot Springs Co. has been organized with H. G. Elchberger, president, and L. A. Connell, secretary-treasurer; capital \$30,000.

Woolwine-Cooperage Plant.—It is reported that J. C. De Hart & Co. will erect cooperage plant.

WEST VIRGINIA.

Fairmont—Coal Mines and Coke Ovens.—Red Rock Fuel Co. has incorporated, with \$10,000 capital, to mine coal, manufacture coke, etc.; incorporators, William M. Kitzmiller, Frank R. Crislin, James McMullen, Walter C. Harris and Henry S. Dringer, Jr., all of Philadelphia, Pa.

Fairmont—Lumber Company.—E. E. Board, F. A. Floyd, S. D. Slesson, G. M. Alexander and associates have incorporated the Driscoll Lumber Co., with \$50,000 capital.

Glade (P. O. Krise)—Coal Mines and Coke Ovens.—Gibb-Mont Coal & Coke Co. has been incorporated with \$1,000,000 capital by Alfred T. Damson, Henry P. Everdell, John B. Summerfield, Robert P. Barry, Jr., and Samuel B. Lawrence, all of New York, N. Y., to mine coal and manufacture coke.

Grantsville—Telephone and Telegraph System.—Incorporated: Little Kanawha Telephone Co., with an authorized capital of \$10,000, to construct and operate telephone and telegraph lines in the counties of West Virginia.

Guyandotte—Planing Mill.—The Thornburg Manufacturing Co. will hold a meeting January 10, 1905, to consider increasing capital. J. W. Valentine is president.

Keyser—Real Estate.—Chartered: Forest Spring & Improvement Co., with \$35,000 capital, by George Leatherman, J. T. Carskaden of Keyser, E. E. Snyder of Davis, W. Va.; A. H. Kelm of Elkins, W. Va., and L. A. Rudesill of Mountain Lake Park, Md.

Martinsburg—Cotton Mill.—The Martinsburg Worsted & Cassimere Co. has erected an additional building in which will be installed new machinery.

New Martinsville—Water-works.—Town will vote on the issuance of bonds for the construction of water-works. Address Town Clerk.

New Martinsville—Cigar Factory.—F. M. Kellar, Jr., is reported as to establish cigar factory.

Parkersburg—Oil and Gas Wells.—Alesco Oil & Gas Co. has been incorporated with \$5,000 capital to drill for oil and gas.

Wheeling—Metal manufacturing.—Frank Harris, Edward E. Baldwin, Oliver E. Reid, August E. May, Harry E. Simpson and Geo. W. Dudley have incorporated the Wheeling Metal & Manufacturing Co. with \$50,000 capital.

Wheeling—Bakery.—Incorporated: Juergens Bakery, with an authorized capital of \$25,000, by William Juergens, Louis Storck, Daniel Storck, Charles Flanagan and Wm. Miller.

Wheeling—Construction Company.—Incorporated: Security Construction Co., with \$100,000 capital, by L. G. Hallock, H. S. Sands, Geo. W. Lutz, B. F. Perkins and D. C. Kurner.

INDIAN TERRITORY.

Ada—Brick Works.—Ada Pressed Brick & Tile Co. has been organized, with Tom Hope, president; J. F. McKeel, vice president; John W. Beard, secretary, and Frank Jones, treasurer, for the development of brick shale bed near Ada and the manufacture of it into brick; capital \$24,000.

Bartlesville—Hollow Brick.—Western Hollow Brick Co. has been incorporated with \$200,000 capital by J. J. Curl, Frank Buckner and Charles E. Hair.

Haskell—Telephone System.—Incorporated: Haskell Telephone Co., with \$10,000 capital, by George S. Widden, E. G. Hopkins, W. J. Creswell, J. C. Scully and C. E. Henson.

OKLAHOMA TERRITORY.

Anadarko—Electric Light Plant.—City will construct electric light plant, for which \$10,000 is available, and bids will be received until January 9, 1905.*

Cherokee—Telephone System.—Cherokee Rural Telephone Co. has been incorporated with \$12,000 capital, by C. Bradley, George H. Coulson, A. D. Small, J. W. Howard and M. Slemmons.

Cooperton—Mining and Milling Company.—Andrew Nelson, W. J. Hood and associates have incorporated the Cooperton Mining & Milling Co., with \$1,000,000 capital.

Kingfisher—Light, Heat and Power Plant.—Citizens' Gas, Light, Heat & Power Co. has been incorporated, with \$100,000 capital, by E. E. Hull, C. C. Roberts of Kingfisher and J. B. Buckies of Enid, O. T.

Oklahoma City—Manufacturing.—Chartered: Southwest Optical Manufacturing Co., with \$900 capital, by W. M. King, J. W. Bokee and Lowell Houchin, to erect plant for the manufacture of optical goods.

Oklahoma City—Packing-plant Improvements.—Oklahoma City Packing Co. has been reorganized with C. G. Jones, president; Geo. Sohlberg, secretary, and H. L. Krider, treasurer and general manager. The company will increase its capital to \$200,000 and make extensive improvements, including the construction of a lard refinery, increasing cold-storage facilities, installation of fertilizer plant and glue department. It is also the intention to increase the hog-killing capacity from 500 to 2000 and cattle from 250 to 500.

Oklahoma City—Oil, Coal and Gas Company.—H. Overholser, Eugene Wallace and Ed Overholser have incorporated the Overholser Oil, Coal & Gas Co. with \$1,000,000 capital.

Oklahoma City—Construction Company.—Statehood Construction Co. has been incorporated, with \$100,000 capital, by J. W. Grant, H. D. Bell of Oklahoma City, O. T., and A. E. Sumner of Evanston, Ill.

Shawnee—Plumbing.—Walter Newman, George B. Johnson and Lida Newman have incorporated the Newman Publishing Co. with \$20,000 capital.

BURNED.

Atlanta, Texas.—B. F. Lumpkin & Sons' saw-mill; loss \$7000.

Atlee, Va.—George C. Smith's barn; loss \$1000.

Baltimore, Md.—Elbarger Transfer Co.'s

Whitestone, Va.—Cralle, Hubbard & James' storehouse, waiting-room and pickle factory.

BUILDING NOTES.

*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

Austin, Texas—City Hall.—City contemplates erecting \$30,000 city hall. Address The Mayor.

Chattanooga, Tenn.—Sanitarium.—Huntington & De Sabla are preparing plans for the erection of three-story building, 68x112 feet, for the Lovejoy Sanitarium reported incorporated last week with \$50,000 capital.

Birmingham, Ala.—Business Building.—City Paper Co. has had plans prepared by W. C. Weston for the erection of two-story building.

Birmingham, Ala.—School Building.—Stockmar Construction & Improvement Co. has contract at \$99,987 for the erection of high-school building previously reported.

Columbia, S. C.—Store Building.—Murray Drug Co. is having plans prepared for the erection of three-story brick building, 70x200 feet.

Conway, S. C.—Building.—H. P. Little has contract to erect building, 20x60 feet, for B. G. Collins, previously reported, for post-office.

Dallas, Texas—Building.—P. P. Martinez has permit to erect three-story brick building 25x92 feet at a cost of \$6847.

Kansas City, Mo.—College Building.—J. F. Spalding Building Co. will be incorporated with \$50,000 capital by James F. Spalding and others to erect five-story building for the Spalding Commercial College.

Knoxville, Tenn.—Stable.—W. H. D. Stewart has secured a permit to erect a stable of concrete block.

Knoxville, Tenn.—Warehouse.—Carden Fruit Co. has had plans prepared by A. J. Cloyd for the erection of \$8000 warehouse on site recently purchased.

Little Rock, Ark.—Administration Building.—Sealed proposals in triplicate will be received until January 20, 1905, at the office of Robert R. Stevens, C. Q. M., San Antonio, Texas, and at the office of Quartermaster, Fort Logan H. Roots, Ark., for the construction of brick administration building, including the installation of plumbing, hot-water heating and wiring for electric lighting at Fort Logan H. Roots, Ark., in accordance with plans and specifications, which can be seen at office of Chief Quartermaster, San Antonio, Texas, and at office of Quartermaster, Fort Logan H. Roots. Information furnished on application. United States reserves usual rights.

Little Rock, Ark.—Apartment-house.—Geo. R. Mann is preparing plans for proposed \$50,000 apartment-house to be erected by H. L. Remmel.

Louisville, Ky.—Office Building.—J. J. Schlosser has purchased site on which to erect eight-story office building at a cost of \$80,000.

Memphis, Tenn.—Business Building.—John W. Dillard and Mrs. R. L. Coffin, joint owners of site at Union and 2d streets, are having plans prepared for the erection of five-story business building, which will be occupied by the Austin Clothing Co.

Monroe, N. C.—Depot.—It is reported that the Seaboard Air Line Railway contemplates the erection of passenger and freight depot. W. W. Gwathmey, Jr., Portsmouth, Va., is chief engineer.

Nashville, Tenn.—Dwelling.—Saul Gordon has permit to erect \$9000 residence.

Nashville, Tenn.—Bank Building.—A new bank, organized by Edgar Magness of the State Trust Co. and associates, will erect bank building of cement construction in West Nashville.

Nashville, Tenn.—Dwelling.—Robert Luck will erect residence at a cost of \$5000.

New Orleans, La.—Hotel.—The New Abita Springs Hotel Co., Ltd., has been incorporated with \$28,500 capital. J. F. Muller is president, and Octave L. Aubert, secretary-treasurer.

New Orleans, La.—Apartment-house.—It is reported that Edward S. Caldwell of New York, N. Y., contemplates the erection of an apartment-house at St. Charles and Girod streets. Mr. Caldwell can be addressed at the St. Charles Hotel.

Norfolk, Va.—Officers' Quarters, Barracks.—Penn Bridge Co., Beaver Falls, Pa., is reported to have contract at \$133,000 for the construction of officers' quarters and barracks, previously reported. J. T. McMahon will supervise the construction.

Palatka, Fla.—City Hall.—P. J. Beck's contract at \$7490 for the erection of city building, previously reported. H. J. Klutho, Jacksonville, Fla., prepared the plans.

Pleasanton, Texas—Courthouse.—Board of Supervisors of Atascosa County are having plans prepared by Harris & Shopbell, Evansville, Ind., for the erection of proposed \$40,000 courthouse.

Port Lavaca, Texas—Store Building.—C. H. McCoy of Ardmore, I. T., has purchased site at North and Guadalupe streets on which to erect double brick store building.

Prattville, Ala.—Warehouse.—Continental Gin Co. has purchased site on which to erect warehouse.

Prattville, Ala.—Hotel.—It is reported that C. E. Thomas and Ailie Northington have purchased site on which to erect hotel at a cost of \$12,000.

Prattville, Ala.—Church.—Methodist congregation contemplates the erection of \$18,000 edifice. Address The Pastor.

Prattville, Ala.—Courthouse and Jail.—Bruce Architectural Co., Birmingham, Ala., and Atlanta, Ga., has been engaged to prepare plans and specifications for \$45,000 courthouse and \$30,000 jail previously reported to be built by Autauga county; to be of fireproof construction.

St. Louis, Mo.—Business Building.—Michael Kane has purchased site on which to erect business building.

St. Louis, Mo.—Apartment-houses.—Chas. H. Deitering has prepared plans for four apartment-houses.

St. Louis, Mo.—Building.—Columbia Trans-

OF GREAT VALUE.

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General Office and Factory
346-348 Wabash Avenue, Chicago, Ill.

Baltimore Office: 321 St. Paul St.

Baltimore, December 6, 1904.

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Baltimore, Md.,

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AMERICAN LUXFER PRISM CO.,
R. A. Wood, Agent.

grain elevator at Locust Point, loss \$18,000; C. P. Blackburn & Co., 11 East Saratoga street, agents.

Crowley, La.—A. W. Treville's cigar factory; loss \$1500.

Dahlonega, Ga.—Dahlonega Hotel, owned by M. G. Head; loss \$3500.

Donaldsonville, Ga.—Benton-Shingler Company's cotton gin; loss \$3000.

Huckaby, Texas.—J. B. Winters' cotton gin; loss \$9000.

Jacksonville, Fla.—Florida-Georgia Syrup Manufacturing Co.'s plant.

Madison, N. C.—Penn Tobacco Factory; loss \$6000.

Moultrie, Ga.—Moultrie Oil Mill, owned by E. S. Nace; loss \$12,000.

Mt. Olive, Miss.—Warren-Gee Lumber Co.'s plant; loss \$35,000.

Norfolk, Va.—Oliver Refining Co.'s warehouse; loss \$5000.

Petersburg, Va.—Southside Manufacturing Co.'s woodworking plant; loss \$40,000.

Quanah, Texas.—Plant of the Quanah Ice Works; loss \$6000.

Shaw, Miss.—Lauderdale Lumber Co.'s mill; loss \$20,000.

Shreveport, La.—Vaughan Grocery Co.'s grain warehouse; loss \$6000.

St. Louis, Mo.—Thalman Printing Ink Co.'s plant.

Taylorsville, Miss.—William Cargile's saw-mill and cotton gin.

Tucker, Ark.—Asa Watson's grist mill destroyed by explosion.

Tyler, I. T.—M. T. Jackson's cotton gin; loss \$2500.

Washington, D. C.—Metropolitan Club-house; loss \$50,000.

Dallas, Texas—Church.—First Methodist Church has purchased site on which to erect \$100,000 edifice. Address The Pastor.

Dallas, Texas—Exposition Building and Auditorium.—Plans by Otto H. Lang have been accepted for exposition building and auditorium previously reported to be erected. Exposition hall will be 200x250 feet, with 50,000 feet of floor space, and lighted through 10,000 square feet of glass surface; auditorium, 125x150 feet, with a stage 35x25 feet, and a seating capacity of 4000. Buildings will be constructed of either reinforced concrete or brick and equipped with steam heat. Bids for the construction will shortly be asked.

Edna, Texas—Courthouse.—Jackson county has voted affirmatively the \$50,000 bond issue previously reported for the erection of courthouse. Address County Judge.

Fort Worth, Texas—Hotel.—Madigan & Coon are having plans prepared for the erection of seven-story hotel at a cost of \$200,000.

Fort Worth, Texas—Pavilion, Theater, etc.—It is reported that the Rosen Heights Street Car Co., Sam Rosen, president, will expend \$15,000 in the construction of a pavilion, summer theater and lake at Rosen Heights.

Hamilton, Ga.—Bank Building.—New bank organized by O. S. Barnes and associates will erect bank building.

Hillsboro, Texas—Church.—First Baptist Church contemplates the erection of \$12,000 edifice. Address The Pastor.

Jamestown, Tenn.—Courthouse.—Fentress county contemplates issuing \$16,000 of bonds for the erection of courthouse. Address County Judge.

Kansas City, Mo.—Apartment-house.—J. H. Stoops will erect three-story brick apartment-house, 64x58 feet, at a cost of \$10,000.

fer Co. has purchased site on which to erect fireproof building.

St. Louis, Mo.—Dwellings.—Charles H. Delfering is preparing plans for Mrs. Emma H. Whittemore's proposed \$20,000 residence and for a \$14,000 residence to be erected by Edward K. Love; also for residence for Mrs. Minnie Lindenschmidt to cost \$19,000.

Tulsa, I. T.—Depot.—It is reported that the St. Louis & San Francisco Railway is arranging for the erection of brick and stone station at a cost of \$30,000. J. F. Hineley, St. Louis, Mo., is chief engineer.

Washington, D. C.—Dwelling.—Dr. E. M. Gallaudet has had plans prepared by Wood, Bonn & Deming for the erection of residence.

Winston-Salem, N. C.—Depot Improvements.—Reports state that the Norfolk & Western Railway will erect addition 40x51 feet to depot. C. S. Churchill, Roanoke, Va., is chief engineer.

RAILROAD CONSTRUCTION.

Railways.

Anderson, S. C.—The survey for the proposed Anderson & Greenville Electric Railway is reported practically completed. R. C. McKinney, H. T. Prevost, M. L. Glenn, E. Garrison and G. E. Heath are on the work.

Asheville, N. C.—The Asheville & Rutherfordton Railway proposes to amend its charter so as to build a branch to Tryon and other branches elsewhere. Gen. T. F. Davidson, counsel, who is one of the directors, may be able to give information.

Baton Rouge, La.—It is reported that a railroad is being constructed from Zachary, La., to Deerford, and thence to the sawmills of Milligan Bros., near Pride, La. The Yazoo & Mississippi Valley Railroad is said to be furnishing the rails for the line, the ties being furnished by the lumber firm named.

Belton, Texas.—The Belton-Temple Traction Co. has begun the operation of its line just completed from Belton to Temple, a total of 12 miles.

Bluefield, W. Va.—The Mercer Electric Railway Co. has, it is reported, been granted a franchise to build an electric railway from Bluefield to connect with the Deepwater Railway at Widemouth, and also to build another electric line from Bluefield via Princeton to Athens.

Bowie, Texas.—A conference has been held between business men of Bowie and Messrs. Chamberlain and Churchill of St. Louis and Fort Worth, respectively, on a proposition to build a railroad from a connection with the Missouri, Kansas & Texas Railway at Nocomia via Montague to Bowie. Another meeting is to be held.

Bristol, Va.—Tenn.—E. S. Fraser, chief engineer of the proposed Virginia & South-eastern Railway, an extension of the Virginia & Southwestern line, is reported as saying that surveys will be completed early next month from Tom's Creek, Va., and Cockwin, Va., to Clinchport, Va., 37 miles, and that contracts will then be let.

Brookhaven, Miss.—The Brookhaven & Pearl River Railroad Co., lately chartered, has organized by electing directors as follows: D. J. Batchelder, Jr., S. E. Moreton, S. J. Carpenter, Charles L. Rose and Joseph Jullier.

Charleston, W. Va.—The Kanawha & Pennsylvania Railroad Co. is reported incorporated to build a line from Pittsburgh, Pa., to Charleston, and is preparing to build from the mouth of Blue creek to Elk river and thence to West Charleston, connecting at Elk river with the Imboden & Odell Railroad. Ex-Gov. W. A. MacCorkle, who is a director in the Imboden & Odell Railroad, may be able to give information.

Chicago, Ill.—A report from Little Rock, Ark., says that the Chicago, Rock Island & Pacific Railway proposes to build a line from the north into that city. W. L. Darling of Chicago is chief engineer.

Chicago, Ill.—Reported that the Illinois Central Railroad will add 14 tracks to its freight yards at Memphis, Tenn. A. S. Baldwin is engineer of construction.

Chicago, Ill.—The Rock Island system is reported to be surveying for a line from Little Rock, Ark., via Hot Springs and Malvern, Ark., to New Orleans. W. L. Darling is chief engineer.

Chicago, Ill.—It is reported that the Chicago & Alton Railway will cut down some of the grades on its line between Mexico, Mo., and Kansas City. G. H. Kimball is chief engineer.

Clarksburg, W. Va.—The Clarksburg & Western Traction Co. of Clarksburg has been chartered to build an electric railway from Clarksburg to Weston, W. Va., about 20 miles. The incorporators are Humphrey

Brohard of Flemington, W. Va.; Sylvester G. Maural of Lost Creek, W. Va.; Frank B. Haymaker, Charles C. Fittro and Wyckiff M. Conaway of Clarksburg.

Clarksburg, Texas.—Alfred S. Tubbs, secretary and treasurer of the proposed Oklahoma, Texas & Gulf Railway, is reported as saying that 65 miles have been located from Clarksburg south to near Longview, Texas, and that 50 miles of right of way have been secured. Engineers are about to start from Clarksburg north and cross the Red river near the mouth of the Kiamichi river towards the coal fields of the Indian Territory. Construction probably to begin within 60 days. D. W. Bolch is chief engineer.

Corsicana, Texas.—J. V. Watkins of Corsicana is reported to be promoting plans for building an electric railway from Corsicana to Fairfield, Texas.

Detroit, Mich.—Clifford D. Bebee of Detroit has purchased the franchises, rights of way and other assets of the Bluegrass Consolidated Traction Co. of Kentucky, and will, it is said, build the proposed electric railways from Lexington, Ky., to Versailles, Ky., and other points in their vicinity. Matt Walton of Lexington, Ky., it is said, represented Mr. Bebee in the transaction.

Durham, N. C.—The Raleigh & Durham Passenger & Power Co. has been granted a franchise in Raleigh. It proposes to connect the two cities. Jones Fuller of Durham and others are interested.

Dyersburg, Tenn.—The Dyersburg Northern Railroad Co. of Dyer county has been incorporated with \$10,000 capital by R. M. Hall, Charles A. Hall, George T. Weakley, J. C. Doyle and W. H. Rupe. The line proposed is from Dyersburg to Tiptonville, about 30 miles, and elsewhere.

Earle's, Ky.—Mr. M. M. Wheeler, chief engineer of the Kentucky Midland Railroad Co., which proposes to build a line from Madisonville to Central City, Ky., 26 miles, writes the Manufacturers' Record that up to the present time no construction work has been authorized nor have any location surveys been made, although it is expected to begin location soon.

East St. Louis, Ill.—Reported that plans are agreed upon for an extension of the St. Louis, El Reno & Western Railway from Guthrie, O. T., to connect with the Missouri Pacific Railway at Peru Junction, Kan.; also southwest from El Reno, O. T., to connect with the Kansas City, Mexico & Orient Railway at Hobart, O. T., and thence to a point in Texas. J. C. Van Riper of East St. Louis is president.

Emporia, Va.—Mr. G. L. Vincent, president of the Greenville Timber Co., writes the Manufacturers' Record confirming the report that a railroad is projected by the company to connect Smithfield, Va., with some point on the Norfolk & Western Railway.

Fernwood, Miss.—The Fernwood & Gulf Railroad Co. is reported to have finished tracklaying to Tylertown, Miss.

Galveston, Texas.—Mr. C. F. W. Felt, chief engineer of the Gulf, Colorado & Santa Fe Railway, writes the Manufacturers' Record that the Jasper & Eastern Railway, now under construction from Kirbyville, Texas, on the Gulf, Beaumont & Kansas City Railway, to a point near De Ridder, La., about 40 miles, will probably be extended 15 miles, and that branches will also be built.

Gulfport, Miss.—J. A. Jones, first vice-president of the Gulf & Ship Island Railroad, is reported as saying that the contract has been awarded for the extension from Silver Creek to Columbia, Miss., 27.5 miles.

High Point, N. C.—Drake, Markee & Co., contractors, are said to have offered to build the proposed electric railway to connect High Point and Winston-Salem for \$18,000 per mile. W. H. Ragan, M. J. Wrenn and R. H. Wheeler of the Manufacturers' Club have been appointed a committee to solicit subscriptions for the enterprise.

Houston, Texas.—The Texas & New Orleans Railroad will, it is reported, make considerable improvements to its terminals at Sabine, Texas. A. V. Kellogg is engineer in charge of way at Houston.

Kansas City, Mo.—George C. Cowles is chief engineer for the proposed Guthrie, Fairview & Western Railway, for the construction of which bids will be received until January 20 at the office of the Guthrie, Fairview & Western Construction Co., Snedley Building, Kansas City. The work will be let either in five-mile or ten-mile sections.

Kansas City, Mo.—Mr. Willard E. Winner writes the Manufacturers' Record from the office of the Leavenworth Construction Co., confirming the report that the Sedalla & Warrensburg Electric Railway proposes to build a 30-mile line. J. G. Hughes will be chief engineer in charge of the work.

Kathleen, Fla.—Reported that Strickland & Roberts will extend their standard-gauge tram railroad north to Registers Still and thence to Nettie.

Kirbyville, Texas.—Joseph A. Owens is reported to have 72 teams and McCabe & Steen 100 teams at work on the Jasper & Eastern Railway, the Santa Fe extension from Kirbyville east towards Alexandria, La.

Laurel, Miss.—Reported that C. J. Abbott of the Westinghouse Company of Pittsburgh is making estimates concerning the probable cost of building an electric railway from Laurel to Hattiesburg, Miss., and perhaps to Ellisville. E. K. Stallo of Laurel is said to be interested.

Little Rock, Ark.—Mr. A. F. Cook, secretary of the Mississippi, Arkansas & Western Railway Co., writes the Manufacturers' Record that it is proposed to build an extension from Big Bayou, Ark., to Gains Landing, Ark., eight miles. Howard Coles at Blissville, Ark., is superintendent and chief engineer.

Longview, Texas.—About 15 miles of the extension of the Texas & Gulf Railway, formerly the Texas, Sabine Valley & North-western, are reported ready for track, the laying of which is to begin in January. The extension is from Timpson towards San Augustine.

Louisville, Ky.—It is reported that the Louisville & Nashville Railroad will build a spur from Bardstown to Nazareth, Ky., two miles. R. Montfort is chief engineer.

Lufkin, Texas.—P. A. McCarthy & Son, engineers, are receiving bids for building 8.6 miles of an extension of the Texas South-eastern Railway between Diabolo, in Angelina county, and the Neches river.

Meherrin, Va.—The Lunenburg & Prince Edward Railway is the name of the line just completed from Meherrin to the headquarters of the Lunenburg Lumber Co., which built the road. It is six miles long. It is reported that an extension of several miles will be made.

Mobile, Ala.—President Bird M. Robinson of the Mobile, Jackson & Kansas City Railroad is reported as saying that the line will be completed to Middleton, Tenn., early in February.

Monroe, La.—J. D. Garrison, chief engineer of the proposed Monroe & Lake Providence Railroad, is quoted as saying that the location survey is being made. The line is from Monroe to Lake Providence, La., via Oakridge and Floyd, 62½ miles.

Nashville, Tenn.—An officer of the Tennessee Central Railroad informs the Manufacturers' Record that plans for the extension from Nashville to Chattanooga have not yet been made.

New York, N. Y.—Col. James McNaught, 35 Nassau street, New York city, is reported to be interested in the proposed New Orleans & Mississippi Midland Railroad.

New York, N. Y.—Mr. Donald Fitzgerald, 79 Wall street, writes the Manufacturers' Record that the plan to build an electric railway to connect High Point and Wadesboro, N. C., has not yet matured.

Oklahoma City, O. T.—Reported that the plan has been financed and all right of way secured but 50 miles for the proposed Oklahoma City, Henryetta & St. Louis Railway, which is to be built from Woodward, O. T., to Checotah, I. T., 280 miles. Construction is to begin soon after January 1. John W. Shortell of Oklahoma City and others are interested.

Orange, Texas.—Mr. C. W. Hole, general manager of the Orange & Northwestern Railroad, writes the Manufacturers' Record that shortly after January 1 the company will begin construction of 180 miles of extension north from the present northern terminus. Preliminary surveys have been made for 120 miles, and the work will be pushed as soon as contract is let. A dispatch from Austin, Texas, reports the charter of the Orange Construction Co., capital \$100,000, to build the extension from Buna. The incorporators are I. T. Preston of New Orleans, W. H. Stark and L. Muller of Orange. Mr. Preston is secretary of the New Orleans Terminal Co., a Frisco corporation, and Messrs. Stark and Muller are, respectively, vice-president and president of the Orange & Northwestern, in which it was lately reported Mr. B. F. Yonkum, chairman of the Frisco system, has purchased a large block of stock.

Philadelphia, Pa.—Messrs. Justice Cox, Jr., & Co., Land Title Building, are prepared with profiles, plans, etc., to receive bids for grading, trestles and tracklaying for 17 miles of the proposed Overton County Railroad from the Tennessee Central Railroad to Livingston, Tenn.

Plant City, Fla.—Mr. C. A. Root, one of the incorporators of the Plant City, Arcadia & Gulf Railway, informs the Manufacturers'

Record that the company proposes to take the 12-mile line built by the Warnell Lumber & Veneer Co. and extend it southeast through Hillsborough, Polk, Manatee and De Soto counties to a point at or near Arcadia, making a line reaching from Plant City for 75 miles. The company may also build branches. The officers are: President and general manager, C. A. Root; vice-president, D. C. Thompson; treasurer, William Schneider; secretary, Albert Schneider. The officers are to be the board of directors.

Portsmouth, Va.—Reported that the Seaboard Air Line may build an extension to Mobile, Ala., using the bed of the Hayneville & Morganville Railroad, graded from Hayneville to Morganville, Ala., eight miles, but first extending it to Montgomery, Ala. W. W. Gwathmey, chief engineer, may be able to give information.

Portsmouth, Va.—Reported that the Seaboard Air Line is considering plans for an extension of the Durham branch to Greensboro, N. C., and probably to Mount Airy, N. C. W. W. Gwathmey is chief engineer at Portsmouth, Va.

Prescott, Ark.—Mr. O. H. Heibig, general freight and passenger agent of the Prescott & Northwestern Railway, writes the Manufacturers' Record that the company, which extended its line this year from Tokio to Elberta, Ark., nine miles, proposes to build next year from Elberta west to Nathan, Ark., 10 miles.

Roanoke, Va.—The Southern Anthracite Coal Co. proposes to build a railroad. Arthur D. W. Walton is secretary and treasurer.

South McAlester, I. T.—Reported that the Indian Territory Traction Co. will immediately open seven miles of new line, connecting with Bache and Dow, two mining towns.

Stillwater, O. T.—Frank Wilkoff of Stillwater, is reported as saying that he is receiving much encouragement for his plan to build the proposed Kansas & Oklahoma Central Railway from Peru Junction, Kan., via Stillwater, Guthrie and El Reno, O. T., to a point in Texas. The project, it is said, includes a plan to purchase the St. Louis, El Reno & Western line now in operation from Guthrie to El Reno.

Texas City, Texas.—Mr. C. W. Lewis, superintendent and chief engineer of the Texas City Terminal Co., writes the Manufacturers' Record that the company contemplates building from Texas City Junction to a connection with the Gulf, Colorado & Santa Fe Railway at Fairwood, Texas, four miles.

Tulahoma, Tenn.—C. E. Dyer is reported as saying that capitalists are interested in the proposed electric railway he is promoting from Tulahoma to Lynchburg, Tenn., 12 miles.

Tulsa, I. T.—Grading is reported begun upon the Santa Fe's extension from Owasso to Tulsa, 12 miles. The line, it is reported, will ultimately extend through to Albuquerque, N. M., via Shawnee, Oklahoma City and other points.

Tulsa, I. T.—W. H. Hendren, chief engineer of the proposed Kansas City, Tulsa & Southwestern Railroad, is reported to have completed the survey for the first 100 miles between Tulsa and Chetopa, Kan. After the holidays a line will be run from Tulsa southward via Shawnee to Wichita Falls, Texas.

Washington, D. C.—The Southern Railway is reported to be surveying from Vardaman, Miss., via Bently to Eupora, Miss.; also reported that it will make another survey to Big Creek and Derma, Miss.; furthermore that it will build a line into Yazoo City, Miss. W. H. Wells is engineer of construction at Washington, D. C.

Washington, D. C.—Concerning the report that the Chesapeake Beach Railway would be converted from steam to electricity, Mr. Paul Y. Waters, general manager, writes the Manufacturers' Record that nothing definite has been decided.

Wasato, Ky.—Concerning the press report that the firm would build a railroad from Wasato to a point near Harlan C. H., 10 miles, Messrs. T. J. Asher & Sons, lumber manufacturers, write the Manufacturers' Record saying that they are not now constructing any line, and the chances are that they will not go into the railroad-building business very soon.

Street Railways.

Brownsville, Texas.—It is reported that a franchise has been granted to residents of Brownsville to build a street-railway line.

Grafton, W. Va.—The Grafton Construction Co. has been chartered to build a street railway in Grafton; capital \$25,000. The incorporators are W. E. Harton, G. W. Powell, Thomas F. Jobe, T. E. Bradshaw and W. E. Hildebrand, all of Pittsburgh.

Guthrie, O. T.—Construction of the pro-

posed street railway in Guthrie has begun. John W. Shartell and others are interested.

Jacksonville, Fla.—Application for a street-railway franchise has been made to the city council by Charles L. Myers, Daniel H. McMillan and Ernest C. Budd.

Memphis, Tenn.—City Street Railway Co., recently granted a franchise in Memphis, has, it is reported, applied for an amendment to its charter to permit it to build lines on streets other than those at first proposed.

South McAlester, I. T.—The Indian Territory Traction Co. has been granted a franchise to lay additional tracks in South McAlester.

Sumter, S. C.—J. L. Alnut has applied for a franchise for an electric street railway.

Tazewell, Va.—The Tazewell Street Railway Co. has begun operating its line.

Yazoo City, Miss.—The city council will, it is announced, request bids for the construction of the proposed street railway.

MACHINERY, PROPOSALS AND SUPPLIES WANTED.

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make the wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The Manufacturers' Record has received during the week the following particulars as to machinery that is wanted.

Aluminum Novelties.—See "Novelty Manufacturers."

Barrel Machinery.—See "Crate Machinery."

Barrels.—J. B. Thompson, care of the Old Jordan Distilling Co., Harrodsburg, Ky., wants prices on barrels.

Barytes Mill.—John G. Duncan Co., 308 West Jackson avenue, Knoxville, Tenn., wants lowest dealers' prices on 30, 36 and 48-inch upper and under runner stone for finishing barytes; also new and second-hand mill spindles, steps, drivers, mortiser gears and all irons complete for fitting up stones; second-hand preferred.

Boiler.—Gray's Gold Mining Co., R. F. D. No. 1, Mocksville, N. C., wants prices on 40 to 60-horse-power boiler. (See "Engine and Boiler.")

Boiler.—Bell Lumber Co., Mount Olive, N. C., wants prices on new and second-hand 80-horse-power boiler. (See "Engine and Boiler.")

Boiler.—The Central Sand Co., Kansas City, Mo., will be in the market next March for a steamboat boiler of 50-horse-power capacity to carry 150 to 175 pounds steam.

Boilers.—See "Building Equipment and Supplies."

Boilers.—H. W. Beall, Sumter, S. C., wants the agency for boilers for heating purposes.

Bridge Construction.—H. L. Stricker, secretary Business League, Calvert, Texas, wants to hear from bridge builders regarding the construction of iron bridge over the Brazos river.

Building Equipment and Supplies.—A. W. Graham, Miami, Fla., is in the market for material for a two-story store and office building.

Building Equipment and Supplies.—H. W. Beall, Sumter, S. C., wants the agency for tile for vestibules, bathrooms, etc.; also roofing.

Building Equipment and Supplies.—Chas. Gilpin, builder, Pennsylvania Building, Philadelphia, Pa., and 601 Union Trust Building, Charles and Fayette streets, Baltimore, Md., who has the contract for the construction of hotel for the Caswell Hotel Co., to be erected in Baltimore, Md., after plans and specifications by Mulliken & Moeller, architects, 7 West 38th street, New York, invites subbids on the following materials: Brick, stone, terra-cotta, interior marble, structural steel and iron, cast-iron work, fireproofing, fire-escape, mill work, plastering, painting, glazing, Terrazzo and mosaic flooring, slate work, roofing, vault lights, steel or boiler-iron stack, plumbing, gasfitting, electrical wiring and fixtures, heating system, two electric elevators, one electric pavement lift, one hand pavement lift, Kalamein work, reinforced concrete

work, sheet-metal work, including 10 skylights, fire hose and racks, 14 refrigerators, two cedar roof tanks of 2000 gallons capacity, engines, two horizontal tubular boilers, one blow-off tank, feed-water heater, hot-water tank, two boiler-feed pumps, two brine pumps, ammonia compressor, condenser, brine and ice tank.

Canning-factory Equipment.—H. L. Stricker, secretary Business League, Calvert, Texas, wants to correspond with manufacturers of machinery and equipment for canning factory.

Cans.—H. L. Stricker, secretary Business League, Calvert, Texas, wants to correspond with manufacturers of cans.

Carousals.—See "Merry-Go-Rounds."

Celluloid Novelties.—See "Novelty Manufacturers."

Cob Crusher.—See "Feed-mill Equipment."

Contractors' Equipment.—H. W. Beall, Sumter, S. C., desires the agency for elevator and hoisting machinery for building contractors.

Cotton Goods.—See "Handkerchief Material."

Crate Machinery.—Bell Lumber Co., Mount Olive, N. C., wants prices on new and second-hand machinery for manufacturing barrels, crates, baskets; also veneer machines.

Dredging.—E. Eveleth Winalow, captain, engineers, United States Engineer Office, United States Army, Room 2, Custom-House, Norfolk, Va., will open bids January 9, 1905, for dredging Norfolk harbor. Information furnished on application.

Electric-light Plant.—City of Anadarko, O. T., will receive bids until January 9, 1905, for the construction of electric-light plant, for which \$10,000 is available.

Elevator.—See "Contractors' Equipment."

Elevators.—See "Building Equipment and Supplies."

Engine.—C. L. Straughan, Stubbs, Va., is in the market for a second-hand 18-horse-power gasoline engine.

Engine.—The Carrollton Electric Co., J. G. Cheney, secretary-treasurer, Carrollton, Ga., wants a 40 to 50-horse-power engine.

Engine.—A. J. Baldwin & Co., 102-104 Main street, Dawson, Ga., is in the market for new or second-hand Corliss engine, 14x42 inches.

Engines.—E. S. Cronise, R. F. D. No. 1, Buchanan, Va., wants prices on gasoline and steam engines.

Engines.—See "Building Equipment and Supplies."

Engine and Boiler.—See "Steam-power Plant."

Engine and Boiler.—Gray's Gold Mining Co., R. F. D. No. 1, Mocksville, N. C., wants prices on 35 to 50-horse-power engine and 40 to 60-horse-power boiler.

Engine and Boiler.—Bell Lumber Co., Mount Olive, N. C., wants prices on new and second-hand 60-horse-power engine and 80-horse-power boiler.

Feed-mill Equipment.—E. S. Cronise, R. F. D. No. 1, Buchanan, Va., wants prices on a corn and cob crusher.

Foundry Equipment.—G. V. Prentiss, secretary Southern Skein & Foundry Co., Chattanooga, Tenn., will want after January 1 catalogues of foundry equipment.

Handkerchief Material.—The Charlotte Handkerchief Manufacturing Co., 24 West 5th street, Charlotte, N. C., wants competitive prices on handkerchief material.

Heating Apparatus.—H. W. Beall, Sumter, S. C., wants the agency for steam, hot-water and hot-air heating apparatus for churches, large and small houses.

Hoisting Equipment.—See "Contractors' Equipment."

Ice Machine.—The Carrollton Electric Co., J. G. Cheney, secretary-treasurer, Carrollton, Ga., wants a five-ton ice machine; second-hand.

Kalamain Works.—See "Building Equipment and Supplies."

Lighting Plant.—H. W. Beall, Sumter, S. C., wants the agency for acetylene gas-lighting outfits.

Lumber.—The Eagle Manufacturing Co., Wilmington, N. C., will probably want prices on hardwood of all kinds.

Machine Tools.—Cyclone Drilling Machine Co., Orrville, Ohio, is in the market for 14-inch by 6 or 8-foot bed engine lathe with hollow spindle to admit of 1½-inch stock.

Merry-Go-Rounds.—S. H. Bagnell, Port Gibson, Miss., is in the market for merry-go-rounds; second-hand preferred.

Metal-working Equipment.—See "Tin-can-Factory Equipment."

Mica Separating.—See "Separating Machinery."

Mill Supplies.—See "Barytes Mill."

Mining Equipment.—Gray's Gold Mining Co., R. F. D. No. 1, Mocksville, N. C., wants prices on 35 to 50-horse-power engine, 40 to 60-horse-power boiler, two, five, ten-stamp mill, crushers, feeder, etc.

Novelty Manufacturers.—McEwen-Gibson Lumber Co., 60 Patton avenue, Asheville, N. C., wants addresses of manufacturers of aluminum or celluloid novelties.

Pumps.—See "Building Equipment and Supplies."

Railroad Construction.—Justice Cox, Jr., & Co., 1238 Land Title Building, Philadelphia, Pa., will receive bids for the construction of 17 miles of Overton County Railroad, Tennessee.

Railway Equipment.—Willard E. Winner, care of the Leavenworth Construction Co., Kansas City, Mo., will be in the market for 30 miles of 70-pound rails, either new or first-class relayers.

Refrigerating Machinery.—See "Building Equipment and Supplies."

Roofing.—E. S. Cronise, R. F. D. No. 1, Buchanan, Va., wants prices on roofing of all kinds.

Roofing.—See "Building Equipment and Supplies."

School Furniture.—J. H. Moseley, Magnolia, Miss., wants prices on school desks, maps, charts and other school furniture.

Steam Specialties.—See "Building Equipment and Supplies."

Separating Machinery.—The Consolidated Feldspar Co., 233 St. Paul street, Baltimore, Md., wants to correspond with manufacturers of machines for separating mica either as a by-product or waste from feldspar.

Sewerage System.—See "Water-works."

Sewerage System.—Sealed proposals will be received until January 11, 1905, for the construction of a four-foot metal concrete sewer 400 feet long with catch-basin according to plans and specifications to be seen at office of John W. Maxcy, 203, 204 and 205 Binz Building, Houston, Texas. Certified check for \$300 must accompany each bid. Harris county reserves usual rights; John W. Maxcy, superintendent of roads and bridges; T. Blake Dupree, county judge.

Stave Machinery.—Peacock's Iron Works, Selma, Ala., are in the market for a machine for manufacturing staves for rosin barrels.

Steam-power Plant.—A. M. Tynes, Shuqualak, Miss., will probably soon want steam-power plant for cotton factory.

Structural Steel and Iron.—See "Building Equipment and Supplies."

Tank.—A. J. Baldwin & Co., 102-104 Main street, Dawson, Ga., is in the market for new or second-hand iron tank 8x8 feet.

Tanks.—See "Building Equipment and Supplies."

INDUSTRIAL NEWS OF INTEREST

Cob-Pipe Machinery.

Cob-pipe machinery consisting of a 20-horse-power engine, two cob-pipe lathes and other necessary equipment is offered for sale by C. S. Allen, Bowling Green, Ky.

Wants Saw-Mill and Timber.

J. J. Hainsworth, 602 Hoe Building, St. Louis, Mo., wants to purchase a saw-mill and large tract of timber or control of a lumber company operating its own saw-mill and timber lands.

Adjustable Wheel Tires.

A patent has been allowed on an adjustable wheel tire, and its owner wants to arrange with some manufacturer to make the article. For information address R. S. Custer, Ochiltree, Texas.

Fine Timber Lands.

Seven hundred acres of fine timber land, believed to contain 5,000,000 feet of timber, are offered for sale by H. B. Walker of Columbus, Ga. This address was erroneously mentioned in the Manufacturers' Record of December 15 as Columbus, La.

Gold Property for Sale.

An unusually large and compact aggregation of gold veins is offered for sale by the owners. The property is located near railways and is so placed that it can readily be worked profitably. For full particulars address Postoffice Drawer 315, Moline, Ill.

Awarded to Williams & Whitman.

The city of Havre de Grace, Md., has engaged Messrs. Williams & Whitman of 902 Whitehall Building, New York, to do the supervising and engineering work in connection with the city's sewerage system, con-

Tin-can-Factory Equipment.—Peerless Can Manufacturing Co., Newport News, Va., wants estimates on machinery for making two and five-gallon oil cans, stamping machines and other tools necessary for making the cans.

Veneer Machinery.—See "Crate Machinery."

Veneer Machinery.—Connolly & Teague, Taylorsville, N. C., want addresses of veneer mill makers.

Water-works.—Water-Works and Sewerage Committee, Louisburg, N. C., will open bids January 15, 1905, for the construction of water-works and sewerage. Certified check for 5 per cent. of amount of bid must accompany each bid. For plans, specifications and general information address T. H. Lacy, secretary, Louisburg. Usual rights reserved.

Well-drillers.—Apache Development Co., Apache, O. T., wants to arrange for the drilling of oil and gas wells.

Woodworking Machinery.—M. P. Server, 524 Cypress street, San Antonio, Texas, wants addresses of manufacturers of wood-working machinery, especially hand or small saw tables.

Woodworking Machinery.—See "Crate Machinery."

Woodworking Machinery.—See "Veneer Machinery."

MEXICO.

Electric Railway.—It is reported that M. D. Watson and J. R. Bickerdike of Chicago, and who are interested in the Rosa Amarilla copper mines, have applied for a concession to build an electric railway from the mines to the Pacific coast. The mines are in the State of Jalisco. The applicants are said to be now in Guadalajara.

Office Building.—The United States & Mexican Trust Co. will erect a modern office building in the City of Mexico; site covers 1200 square meters of land.

Paper Mills.—It is reported that Messrs. E. S. Armstrong and H. C. Armstrong of Lock Haven, Pa., contemplate establishing paper mills in Mexico.

Residence.—Enrique C. Creel, governor of Chihuahua, Chihuahua City, Chl., will build a modern and costly residence.

Rubber Factory.—Guillermo Munoz, manager of the Banco Refaccionario, Chihuahua, Chl., and Salvador Madero of Porras, Coahuila, will establish in Chihuahua a factory for making rubber from the gayule plant.

Telegraph and Telephone Lines.—Messrs. M. D. Watson and J. R. Bickerdike of Chicago, Ill., interested in the Rosa Amarilla mines, Guadalajara, Jalisco, have filed petition for authority to construct telegraph and telephone lines.

tracts for which are now being awarded. Messrs. Williams & Whitman are well-known civil and sanitary engineers. They made the surveys and designed the system which is to be installed for Havre de Grace.

Patent Magnetic Metal Separators.

Recent orders placed with Ezra Sawyer, Worcester, Mass., manufacturer of Patent Magnetic Metal Separators, came from the Buckeye Brass Works, Dayton, Ohio; Messrs. George Dilley & Son, Palestine, Texas, and Messrs. McDowell, Stoker & Co., Chicago, Ill.

Free Fuel for Manufacturers.

The supply and cost of fuel is one of the important questions which manufacturers have to consider. Many progressive sections offer special inducements in this line. Natural gas free to a limited number of factories is a proposition now offered. For information address B. W. M., care of the Manufacturers' Record.

Contract for Gillett Engines.

Buyers of the most modern types of steam boat machinery will be interested to know that the Gillett Iron Works of Lake City, Minn., has closed several contracts to furnish the Gillett Balanced Valve Variable Cut-Off Stern-Wheel Steamboat Engine. Messrs. Gillett & Eaton, proprietors of the Gillett Iron Works, state they can take no more contracts for quicker delivery than five months.

Wants to Invest, With Services.

An experienced manufacturer, at present manager of a large lumber-manufacturing establishment, is desirous of investing from \$4000 to \$5000 in another manufacturing or

supply business. He wants to arrange to give his entire services in connection. Proposition submitted must be of a high-grade character, bearing the strictest investigation. Correspondence can be addressed to "Competent," care of the Manufacturers' Record.

Yarn Mill for Sale.

An active man capable of taking charge of a yarn-spinning mill can obtain particulars regarding a good opportunity by addressing Messrs. Myer & Co., Norfolk, Va. The firm represents manufacturers who want to retire from active management because of other business interests. They desire to either sell an interest or the entire property, or lease. The mill makes cotton-waste yarns on the wool principle, and has plenty of space for additional carding, spinning, weaving or knitting machinery.

Voigtmann Hollow-Metal Windows.

Buyers of fireproof materials for buildings of all kinds are asked to note that the firm of Messrs. Voigtmann & Co. has removed from 8 and 12 Jones street to 439 West 14th street and 427 West 13th street, New York city. Voigtmann & Co. manufacture hollow-metal windows, which are largely used in the building trades, being specified by many architects and selected by many contractors for their superior features. The Voigtmann standard automatic closing and locking windows and the Voigtmann adjustable weather-guide window are specialties of the company.

Mr. Frederick Gottfried.

Messrs. Patterson, Gottfried & Hunter, Limited, announce with deep regret the death of the president of the company, Mr. Frederick Gottfried. For years Mr. Gottfried, as vice-president, was actively engaged in furthering the company's interests, and will be greatly missed not only by his business associates, but also by the trade with whom he had relations. Patterson, Gottfried & Co. will continue to furnish machinery, metals, hardware, tools and supplies to buyers, the establishment being at 146-150 Centre street, corner of Walker street, New York.

Allis-Chalmers' Staff.

W. L. Loveland, the newly-appointed head of the mining and crushing machinery department of the Allis-Chalmers Company, is widely known among mining men. He has at command all the benefits which come from both a technical and practical training, and his acquaintance extends from city men to those who operate plants in the wilds of the mining countries. J. U. Jones of Dallas, Texas, one of the best-known salesmen in the Southwest, has joined the staff of the Allis-Chalmers Company of Milwaukee, and will hereafter represent the company and its widely varied products in Texas and its tributary territory. He is well and widely known in his territory. H. Schilllin has recently been made assistant manager of the mining and crushing machinery department of the Allis-Chalmers Company, with headquarters in the New York Life Building, Chicago. Mr. Schilllin's abilities in his branch are well known.

The Pittsburg of West Virginia.

Probably no Southern State is showing more active industrial progress, comparatively speaking, than is West Virginia. Its rich resources in coal and timber are being developed and millions of capital is being invested not only by its own people, but also by capitalists from every section of the United States. Parkersburg, doubtless the most talked of city in West Virginia, is destined to be, its people believe, the Pittsburg of West Virginia. It is surrounded by great coal, gas, oil and timber fields; its transportation rates by rail and water are low, and its location makes it accessible to the great distributing points. The city has a population of 25,000, which is constantly increasing, and its surrounding land is naturally adapted for manufacturing and residence purposes. Factory sites, industrial propositions and West Virginia investments are the specialties of the West Virginia Real Estate Co. of Parkersburg, and that company invites investors, manufacturers and people seeking new locations to write them for detailed information regarding any specific advantages in which they may be interested.

Periodic Auditing.

The custom of having periodic audits of accounts by public accountants is becoming more general in all branches of business, and it is recognized that such examinations tend to better conditions and improve the conduct of all kinds of enterprises. In many concerns the business has outgrown the system of accounting in use, which has become inadequate and unsatisfactory. A modern scientific system not only costs no more than an obsolete one, but in most instances

costs less, and its advantages are self-evident. In this connection it may be stated that Patterson, Teale & Dennis of New York are the regularly-appointed auditors for many railroads, corporations and firms, and have had large experience in the installation of cost accounts in factories and of improved systems of accounts in mercantile houses. They make periodical examinations of books and accounts for stipulated yearly fees. A large staff of experienced, trained assistants, familiar with all branches of mercantile, banking and corporation accounts, enables the firm to handle any work promptly and intelligently. Messrs. Patterson, Teale & Dennis have their main offices at 39 Broad street, New York, and their Baltimore office is at 301 North Charles street, John A. Tompkins being the resident partner in charge.

TRADE LITERATURE.

The Myers Calendar.

A calendar which embraces a good advertising feature is that being issued by Messrs. F. E. Myers & Bro. of Ashland, Ohio. It contains illustrations of many kinds of pumps, flexible door hangers, etc., which F. E. Myers & Bro. manufacture. The calendar will be useful and convenient in reminding buyers where to buy the most modern pumps.

The Wm. Graver Souvenir.

As a holiday souvenir the Wm. Graver Tank Works of 77 Jackson Boulevard, Chicago, has issued a very useful leather combination note case and coin purse. Recipients of this most handy article are not likely to lose sight very readily of the fact that the Wm. Graver Tank Works is one of the largest steel-storage and car-tank plants in the country.

An Artistic Calendar.

One of the most artistic calendars for the year 1905 has just been issued. It is sent out by Messrs. F. W. Bird & Son, the well-known makers of Paroid Roofing and Neponset Building Papers. The calendar is a work of art, representing "Neponset," the chief, looking down from a high cliff onto the firm's mills. For one of these calendars address F. W. Bird & Son, East Walpole, Mass.

The Gibbs Calendar.

A very useful calendar is that which has just been issued by the Gibbs Machinery Co., 894 West Gervais street, Columbia, S. C. It is especially convenient for factories, mills, etc., because of its size and large print, being clearly legible at a distance. The Gibbs Machinery Co. handles engines, boilers, saw-mill, corn-mill, brick-making, veneer, crate, barrel, basket machinery, etc.

Three Rs and Three Ss.

Everybody has heard of the three Rs, but did you ever hear of the three Ss? If not, then write Messrs. Ralph H. Brown and Joel Hunter, offices in the Empire Building, Atlanta, Ga. They will send particulars. They are at present sending out a reasonable leaflet wishing their friends a Merry Christmas and a Happy New Year. Messrs. Brown and Hunter are among the best-known public accountants and auditors, and are giving their attention to a large and growing clientele.

Variable-Speed Motors.

Modern practice has thoroughly endorsed electric drive for machine tools, but has left open for individual determination two important factors. One is the selection of the motors and its means of speed control, and the other is the manner of transmitting power to the material to be worked upon. These factors are given some attention in the leaflet issued by the Crocker-Wheeler Company of Ampere, N. J. Send for the leaflet. It tells about a new line of Crocker-Wheeler variable-speed motors.

A Satisfactory Roofing.

For folks who want a satisfactory roof there has been issued a neat booklet giving some pointed facts regarding metal shingles. Roofing should be weatherproof and fireproof, as well as durable, and its cost should not be prohibitive. Cortright metal slates and Victoria shingles have for many years been satisfying the architect, the building contractor and the owner of the house. They are the products of which details are presented in the booklet mentioned. The Cortright Metal Roofing Co., 50 North 23d street, Philadelphia, manufactures the Cortright roofing specialties.

Now Use the Binder.

Recently mention was made of the fact that the Columbus Iron Works Co. of Columbus, Ga., had issued a binder, perforated and with paper fasteners, for its publications. These publications are about to begin to

appear, and will contain interesting references to the company's plant and the articles which it manufactures. The company operates an extensive general iron-works plant, one of the largest and most complete in the South, and buyers will find it to their advantage to keep posted on Columbus products. If you have not yet received a binder, write for one and begin to use it.

Feed-Water Heater and Purifier.

A pocket leaflet has been published to present in brief form the cardinal points of the Webster Feed-Water Heater and Chemical Purifier. Webster heaters have won their reputation solely on their merit, and this is well known to all prominent engineers. One-half million horse-power now in use tells their value more impressively than words could do it. That the Webster devices have done great work for steam-users is universally recognized. They have reduced steam economy to a science and automatic prevention of waste and danger to a fine art. For copies of this new booklet address Messrs. Warren Webster & Co., Camden, N. J.

A Lubrication Number.

"Graphite" begins the new year with a special issue of "Graphite" devoted to graphite lubrication. This number will be sent to thousands who are vitally interested in lubrication in the hope of leading to a better understanding of the principles underlying the most effective use of Dixon's Pure Flake Graphite. Graphite lubrication is not a mere theory up for discussion. It is a well-established fact of modern engineering growing in importance every day, and the January "Graphite" gives its readers plenty of important data regarding the various forms and the ways of using them. Do not fail to write the Joseph Dixon Crucible Co., Jersey City, N. J., for a copy.

Dodge Flywheels and Lagging.

Having exceptional foundry and machinery equipment for the manufacture of flywheels, balance-wheels, large transmitters, etc., the Dodge Manufacturing Co. has decided to make a special effort for this class of work and solicit the consideration of builders of engines who may not have sufficient capacity for casting and finishing all or certain portions of their requirements. These facilities of the Dodge corporation are presented in detail in pamphlet No. 61, entitled "Dodge Flywheels and Hardwood Lagging System," and illustrations are presented to further elucidate the text. The Dodge Manufacturing Co. therefore solicits contracts for flywheels, balance-wheels and large transmitters for ropes or belts, correspondence to be addressed to the main offices at Mishawaka, Ind.

Jeffrey Pulverizing Machinery.

Manufacturers and other operators who have to do with crushing machinery will find interesting data for their consideration in the Jeffrey Manufacturing Co.'s catalogue of pulverizing machinery. The company recently purchased the patents and good-will of the Schoellhorn-Albrecht Machine Co. covering its crushing machinery. This line has an established reputation for its effectiveness and value for pulverizing, added to which is the protection of the Jeffrey guarantee. Jeffrey machinery will pulverize anything that needs pulverizing, and numerous operators are now using them with the best possible results in their plants. Free crushing tests are offered to buyers in the field for equipments. Write the Jeffrey Manufacturing Co. at Columbus, Ohio, for copy of new catalogue.

The Publicity Magazine.

All who are interested in the latest and most approved up-to-date mechanical appliances in various lines will find important facts for their contemplation in the Publicity Magazine. This little publication contains particulars regarding equipments, especially the Jones Stoker, which is made by the Jones Underfeed Stoker Co. of Chicago. Charles Bond, selling agent, 520 Arch street, Philadelphia, Pa. One very interesting article in the magazine presents a description and illustrations of the big plant of the American Blower Co. of Detroit. There is also given a detailed description of the Jones Stoker, its principle of construction and operation, and how it affords its users the best possible results in economical boiler operation. Copies of the Publicity Magazine can be obtained from the agent.

Climax Geared Locomotives.

An illustrated catalogue regarding the Climax Patent Geared Locomotive, now being distributed, will interest users of railway equipment. This locomotive is now being used all over the world. It is made upon the most modern and approved principles. Its center gearing, which is peculiar to this type

of engine, furnishing and maintaining an equal distribution of power to both rails. The durability, strength and effectiveness of the Climax locomotive have been fully demonstrated, as is evidenced by the testimony of hundreds of buyers whose letters are on file. The Climax is built for any practical gauge, and to run on either wooden, steel or pole roads as desired. Those who are actively engaged in developments in the forest and field will find it to their advantage to investigate this locomotive and its merits. The Climax Manufacturing Co. of Corry, Pa., is the manufacturer of the Climax.

For Fire Protection.

An interesting leaflet is that which has been issued calling particular attention to the prizes awarded to the Mississippi Wire-glass Co. of 277 Broadway, New York, by the international jury of awards at the World's Fair, St. Louis. The findings of the jury are presented, and make information of value for the architect, the building contractor and the owner of buildings. Upon the figured rolled glass made by the Mississippi Glass Co. and exhibited in competition with other makes of ornamental building glass of domestic and foreign manufacture, the highest honor, the grand prize. A gold medal was also awarded the Mississippi Glass Co. for its "Maze" and "Ribbed" patterns of figured rolled glass for diffusion of light. In recognition of its proven efficiency as a fire retardant the honorable jury distinguished the wireglass made by the Mississippi Wire-glass Co., awarding it the grand prize.

Shaw Concrete Building Blocks.

Every contractor, architect and owner of constructed work should be conversant with the information detailed in the illustrated pamphlet issued as a souvenir of the Shaw Block Co. The Shaw block is made of cement concrete for all construction purposes, such as buildings, chimneys, pavements, sidewalks, subways, tunnels, culverts, bridges, conduits, seawalls, dams, docks, piers and jetties. The history, development and future of Portland cement concrete in all manner of construction work is presented in an interesting manner in the Shaw publication. Besides presenting many views of construction work in progress, there are also photographic scenes of completed buildings, bridges, etc. It is stated that the components of the Shaw block combine the maximum of strength and durability with the minimum of weight and cost. F. P. Jenkins of Henderson, Ky., will have charge of several of the Shaw plants to be established in the South, and purposes to organize plants in every good-sized city or county-seat.

Warren Axes and Tools.

Dealers in and users of axes and lumbermen's tools will find the catalogue of the Warren Axe & Tool Co. of special interest to them. This publication gives brief facts regarding the axes of various kinds and shapes, cant hooks, grab mauls, lumber carriers, log grabs, carting grab, trailers and numerous other tools which the company manufactures. In presenting the catalogue the company calls attention to the fact that it is the sole owner of the Sager patent chemical process for treating metals, which, with the highest grade of silver steel, is used exclusively in the Warren output and branded "Sager Special Pat. Chem. Process." This grade is used by many of the most exacting jobbers in solid carload lots. All Warren product is hand-forged, which enables the company to work the steel more thoroughly, thereby making it tougher than is possible by other processes. The Warren Axe & Tool Co.'s extensive and modern factory is located at Warren, Pa., where requests for catalogue should be addressed.

Some Gas and Gasoline Engines.

Present and prospective users of gas and gasoline engines will find data of information for their consideration in the illustrated pamphlet which the National Engineering Co. of Saginaw, Mich., has issued. This publication is a catalogue of the National Junior New Model, the Michigan Five-Horse Gas and Gasoline Engines and the National Junior New Model Pump Jacks, describing each in full and showing their superiority of construction. Explanation is given of the various details and the system of thorough and rigid tests and inspection which the completed machines receive before being permitted to leave the company's works. Those who are about to purchase an engine for the first time will be especially pleased with the lucid manner in which the valuable features of the equipments are set before them for consideration. All the National Engineering Co.'s products have proven in actual practice to be of the highest-grade character, affording their users the maximum of service which the designers be-

lied would be accomplished. Send for copies of catalogue.

About Mechanical Stokers.

"A machine that does the work of a skilled fireman, never gets tired and never strikes" is the mechanical stoker. With the proper engineering conception, design and application, the art of mechanical stoking has been so perfected that this device is now recognized as an indispensable part of standard boiler-room equipment. The question is no longer "Shall mechanical stokers be used?" but "Which stoker shall be adopted?" A stoker which in its every part and function has been developed by hard service and under the watchful care of experienced and competent men, whose sole motive has been constant improvement, is described and illustrated in a publication called "A Few Words About Mechanical Stokers." The particular stoker which the book tells of embodies the experience gained in equipping over a million horse-power of boilers. It is the Roney Mechanical Stoker, built by the Westinghouse Machine Co. of East Pittsburgh, Pa., and which has been largely used for 15 years. The Roney embodies those essential characteristics of a successful mechanical stoker which may be briefly mentioned as simplicity of construction and operation, accessibility, mechanical durability, efficiency, large excess capacity, smokelessness and ability to burn successfully all kinds of coal. These points are dealt with and explained in detail in the Westinghouse book. No operator of boiler plants can afford to remain ignorant of the contents of the publication.

Novelties in Fireproof Building.

Architects and contractors for the erection of buildings, as well as owners of the structures contracted for, will find some important data for their attention in the illustrated book entitled "Novelties in Fireproof Building." This publication tells of the exceptional merits of "Phoenix" hollow-wall construction, red clay and glass roofing tiles and "Herculean" flat arch (terra-cotta), all patented. "Phoenix" blocks are hard-burnt terra-cotta of 4 inches by 8 inches by 12 inches, and specially made, weighing 16 pounds each, the sides thereof either grooved or smooth, as may be required. Tested by a "Riehle" testing machine of 100,000 pounds and laid edgewise, the blocks have a crushing strength of 59.6 tons to the square foot. Walls built of these bricks are claimed to be as much as 50 per cent. lower in cost than similar walls of common red brick. The red-clay tile need not be referred to at length, as it has been used for centuries in Europe, and its merits are conceded. The "Herculean" arch is offered as an ideal fireproof floor, filling requirements in every particular, and many of the representative architects and engineers have adopted it, numerous important buildings in all parts of the country having it as a part of their construction. Messrs. Henry Maurer & Son of 420 East 23d street, New York, are the proprietors of the novelties mentioned, and they have large plants at Maurer, N. J., for manufacturing. Literature regarding the systems can be obtained on application to the offices.

The W. S. Tyler Woven Wire.

It would be difficult to enumerate the numerous uses of woven wire and wire cloth. Wire cloth is demanded in the mining industry, in many kinds of manufacturing, and in almost every other avenue of industrial activity. The manufacture of wire cloth is an art to which the W. S. Tyler Company has been devoted for some 30 years, and its products have become most favorably known wherever there is appreciation of high-class specialties. The most careful buyers in the market are among Tyler enthusiasts. The Tyler Company has issued one of the most creditable catalogues of wire cloth recently met with from a descriptive, illustrative and printer's standpoint. The book shows various designs of the Tyler double-crippled wire cloth, accurate of mesh, the wires thoroughly crimped both ways, composed of special material for service and hard wear, made from brass, copper-bronze, iron and steel wire for all purposes. It also presents correct lists, weights and tables relative to wire cloth, with accurate dimensions in decimal of the mesh or size of the opening between the wires—a feature said to have been originated by the company for the purpose of comparison. Ornamental iron work is also described, the company's reputation in this direction being well known. The W. S. Tyler Company has an extensive manufacturing plant in Cleveland, Ohio, employing 1000 men. Its machinery for wire-working is not only designed, but built in the company's shops. Write for a copy of the catalogue.

FINANCIAL NEWS

The Manufacturers' Record invites information about Southern financial matters. Items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

Review of the Baltimore Market.

Office Manufacturers' Record,

Baltimore, Md., December 28.

The Baltimore stock market has been dull during the past week, but it was not only the holiday season which caused a lessening of the volume of business. For several days before Christmas there was a languid feeling about the street, so that the closing of the exchange on both Saturday and Monday made little difference with the brokers or their customers. Toward the close of the period there was better tone in both United Railways and Seaboard issues, both of which had been depressed immediately before the holidays. About the only other feature was the drop in the price of Atlantic Coast Line common stock, which was merely on account of the payment of the large dividend declared some time ago.

In the trading United Railways common rose from 13 to 15, last sale 14½; the income bonds from 50 to 53, last sale 52½, while the 4s were steady at 92¼ to 92½. Consolidated Gas sold at 84½ to 85¼ and the 5s at 117½. Seaboard common sold from 16 to 18½, the preferred from 33 to 36½, the 4s at 84 to 84½, the 10-year 5s at 103 and the 3-year 5s at 99½. Cotton Duck common changed hands at 8 to 8¼ and the 5 per cents at 74. G. B. S. common sold at 9½ and the firsts at 56½ to 56.

Bank stocks sold as follows: Mechanics', 28; German, 104. Trust and other company stocks sold as follows: Baltimore Trust, 32½; Union Trust, 56 to 57; United States Fidelity & Guaranty, 131.

Other securities traded in were as follows: Baltimore City 4s (1926), 116½; South Bond 5s, 112; Maryland Telephone 5s, 96; Alabama Consolidated Coal & Iron common, 36; do. preferred, 85½; do. 5s, 84; Atlantic Coast Line 4s certificates, 91¼; Virginia deferred (Brown Bros.) receipts, 12½; Georgia, Carolina & Northern 5s, 113; Anacostia & Potomac 5s, 105½ to 105½; Macon Railway 5s, 97½; Atlanta & Charlotte 7s, 105; Carolina Central 4s, 98; Atlantic Coast Line of Connecticut, 320; Atlantic Coast Line Consolidated 4s, 100 to 101; Virginia Midland 2d 6s, 113; do. 5th 5s, 115½ and 115¼; Northern Central Railway stock, 105½ to 106; Georgia Southern & Florida first preferred, 98; Virginia Midland 3d, 113; Norfolk & Carolina 5s, 117½; Virginia Century, 98½; Virginia Midland 4th, 114; Petersburg A 5s, 117; Florida Southern 4s, 98.

SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended December 28, 1904.

Railroad Stocks.	Par.	Bid.	Asked.
Atlanta & Charlotte.....	100	162	170
Atlantic Coast Line.....	100	124	125
Atlantic Coast Line of Conn.....	100	317½	323
Georgia Southern & Florida.....	100	27½	28
Georgia Sou. & Fla. 1st Pref.....	100	98	100
Georgia Sou. & Fla. 2d Pref.....	100	65	75
Seaboard Railway Common.....	100	18½	18½
Seaboard Railway Preferred.....	100	36½	36½
United Railways & Elec. Co.....	50	14½	14½

Bank Stocks.	Par.	Bid.	Asked.
Citizens' National Bank.....	10	28½	29
Commercial & Far. Nat. Bank.....	100	100	100
Drovers & Mech. Nat. Bank.....	100	410	410
Farmers & Mer. Nat. Bank.....	40	59	59
First National Bank.....	100	145	145
German Bank.....	100	105	110
Merchants' National Bank.....	100	170	170
National Bank of Baltimore.....	100	119	119
National Howard Bank.....	10	11	11
National Mechanics' Bank.....	10	28	28
Western National Bank.....	20	40	41

Trust, Fidelity and Casualty Stocks.	Par.	Bid.	Asked.
American Bonding & Trust.....	50	40	40
Commercial & Far. Nat. Bank.....	100	315	330
Fidelity & Deposit.....	50	157½	157½
International Trust.....	100	137	138
Maryland Casualty.....	25	57½	59½
Mercantile Trust & Deposit.....	50	160	160
Union Trust.....	50	57	59

U. S. Fidelity & Guaranty.....	100	132	135
Miscellaneous Stocks.			
Alabama Con. Coal & Iron.....	100	35	37
Ala. Con. Coal & Iron Pref.....	100	83	85½
Atlantic Coast Line 1st Con. 4s.....	100	85	86
Consolidated Gas.....	100	80	80
Consolidated Coal.....	100	70	72
Cotton Duck Voting Trust.....	100	8	8½
G. B. & S. Brewing Co.....	100	9½	10
United Elec. L. & P. Pref.....	50	47	49½

Railroad Bonds.			
Albany & Northern 5s, 1916.....	94½	94½	94½
Atlanta & Charlotte 1st 7s, 1907.....	105	106	106
Atlan. Coast Line 1st Con. 4s, 1922.....	99½	100½	100½
Atlantic Coast Line 4s, Cifs., 1922.....	90	91½	91½
Atlantic Coast Line (Conn.) 4s.....	90	95	95
Carolina Central 4s, 1919.....	97½	98½	98½
Char. Col. & Aug. 2d 7s, 1910.....	110	110	110
Coal & Iron Railway 5s, 1920.....	107½	108	108
Florida Southern 4s, 1910.....	98	98½	98½
Georgia & Alabama 5s, 1915.....	112½	113	113
Georgia, Car. & North, 1st 5s, 1922.....	112½	112½	112½
Maryland & Pennsylvania 4s, 1911.....	95	95	95
Norfolk & Carolina 5s, 1929.....	119½	119½	119½
Petersburg, Class A 5s, 1926.....	117	117	117
Potomac Valley 1st 5s, 1911.....	116	119	119
Seaboard Air Line 4s, 1950.....	84	84½	84½
Seaboard Air Line 5s, 10-year, 1911.....	103	103½	103½
Seaboard Air Line 5s, 3-year.....	99	100	100
Seaboard & Roanoke 5s, 1926.....	112	113	113
Seaboard & Roanoke 1st 5s, 1926.....	113½	113½	113½
Virginia Midland 1st 6s, 1911.....	113	114	114
Virginia Midland 2d 6s, 1911.....	113	113½	113½
Virginia Midland 3d 6s, 1916.....	113	114	114
Virginia Midland 4th 3-4-5s, 1921.....	114	114	114
Virginia Midland 5th 5s, 1926.....	116	116½	116½
West Virginia Central 1st 6s, 1911.....	114	114½	114½
Wilmington & Wel. Gold 5s, 1935.....	119	119	119

Street Railway Bonds.			
Anacostia & Potomac 5s, 1919.....	105½	105½	105½
Augusta Rwy. & Elec. 5s, 1910.....	102½	104	104
Baltimore City Passenger 5s, 1911.....	105	105	105
Central Ry. & Ed. Co. (Balt.), 1922.....	115	115	115
Charleston City Railway 5s, 1923.....	107	107	107
Charleston Con. Electric 5s, 1909.....	92½	95	95
City & Suburban 5s (Balt.), 1922.....	112½	112½	112½
City & Suburban 5s (Wash.), 1918.....	106½	106½	106½
Lake Roland Elev. 5s (Balt.), 1912.....	118	118	118
Lexington Railway 1st 5s, 1919.....	102	104	104
Macon Rwy. & Lt. 1st Con. 5s, 1923.....	97½	97½	97½
Metropolitan 5s (Wash.), 1925.....	117½	118½	118½
Newport News & Old Pt. 5s, 1928.....	100	100	100
Norfolk Railway & Light 5s.....	90½	91	91
United Railways 1st 4s, 1919.....	92½	92½	92½
United Railways Inc. 4s, 1919.....	52½	53	53

Miscellaneous Bonds.

Alabama Consol. Coal & Iron 5s.....	83½	84	84
Consolidated Gas 5s, 1939.....	117	117½	117½
Consolidated Gas 4½s, Cifs.....	100½	100½	100½
G. B. & S. Brewing 1st 3-4s.....	56½	56½	56½
G. B. & S. Brewing 2d Incomes.....	26½	27½	27½
Maryland Telephone 5s.....	96	96	96
Mt. V. & Woodl. Co. 5s.....	73½	75	75
United Elec. Light & Power 4½s.....	83	83	83

SOUTHERN COTTON-MILL STOCKS

Quotations Furnished by Hugh MacRae & Co., Wilmington, N. C., for Week Ending December 24.

	Bid.	Asked.
Abbeville Cotton Mills (S. C.).....	60	60
Aiken Mfg. Co. (S. C.).....	85	90
Anderson Cotton Mills (S. C.).....	115	115
Arkwright Mills (S. C.).....	105	105
Augusta Factory (Ga.).....	72	75
Belton Mills (S. C.).....	100	100
Bilb Mfg. Co. (Ga.).....	102	102
Brandon Mills (S. C.).....	102	102
Buffalo Cotton Mills (S. C.).....	92½	92½
Buffalo Cotton Mills (S. C.) Pfd.....	98	98
Calhoun Cotton Mills (S. C.).....	122½	122½
Chadwick Mfg. Co. (N. C.).....	102	102
Chiquola Mfg. Co. (S. C.).....	95	95
Clifton Mfg. Co. (S. C.).....	85	91½
Clifton Mfg. Co. (S. C.) Pfd.....	101	101
Clinton Cotton Mills (S. C.).....	135	135
Courtenay Mfg. Co. (S. C.).....	105	105
Columbus Mfg. Co. (Ga.).....	90	90
Dallas Mfg. Co. (Ala.).....	79	85
Darlington Mfg. Co. (S. C.).....	85	90
Eagle & Phenix Mills (Ga.).....	106	106
Enslay Cotton Mills (S. C.).....	101	103½
Enoree Mfg. Co. (S. C.).....	85	85
Enoree Mfg. Co. (S. C.) Pfd.....	100	100
Enterprise Mfg. Co. (Ga.).....	80	80
Exposition Cotton Mills (Ga.).....	160	200
Gaffney Mfg. Co. (S. C.).....	55	60
Galveston Cotton Mills (S. C.).....	120	120
Graniteville Mfg. Co. (S. C.).....	120	120
Greenwood Cotton Mills (S. C.).....	102	102
Grendel Mills (S. C.).....	100	100
Henrietta Mills (N. C.).....	196	196
King Mfg. Co. John P. (Ga.).....	90	93
Lancaster Cotton Mills (S. C.).....	110	110
Lancaster Cot. Mills (S. C.) Pfd.....	100	100
Langley Mfg. Co. (S. C.).....	92	92
Laurens Cotton Mills (S. C.).....	174½	174½
Limestone Mills (S. C.).....	95	95
Louise Mills (N. C.).....	98	98
Louise Mills (N. C.) Pfd.....	102	102
Marlboro Cotton Mills (S. C.).....	91	91
Mayo Mills (N. C.).....	180	180
Mills Mfg. Co. (S. C.).....	85	85
Mills Mfg. Co. (S. C.) Pfd.....	100	100
Monarch Cotton Mills (S. C.).....	98	103
Monaghan Mills (S. C.).....	98	103
Newberry Cotton Mills (S. C.).....	120	120
Norris Cotton Mills (S. C.).....	105	105
Orangeburg Mfg. Co. (S. C.) Pfd.....	100	100
Orr Cotton Mills (S. C.).....	99½	101
Pacolet Mfg. Co. (S. C.).....	99	101
Pacolet Mfg. Co. (S. C.) Pfd.....	101	104
Pelzer Mfg. Co. (S. C.).....	172	172
Piedmont Mfg. Co. (S. C.).....	178	181
Poe Mfg. Co. (S. C.).....	129	135
Raleigh Cotton Mills (N. C.).....	105	105
Saxon Mills (S. C.).....	100	103
Sibley Mfg. Co. (Ga.).....	60	62½
Spartan Mills (S. C.).....	132	140
Trion Mfg. Co. (Ga.).....	130	140
Tucupau Mills (S. C.).....	145	145
Union Cotton Mills (S. C.).....	129	129
Union Cotton Mills (S. C.) Pfd.....	99	103
Victor Mfg. Co. (S. C.).....	115	121
Warren Mfg. Co. (S. C.).....	99	101
Warren Mfg. Co. (S. C.) Pfd.....	105	105
Washington Mills (Va.).....	20	20
Washington Mills (Va.) Pfd.....	96	96
Woodruff Cotton Mills (S. C.).....	97	100

New Corporations.

The Citizens' Bank of Lexington, Tenn., has begun business with \$60,000 capital. The Irwin Bank is to begin business at Tunica, Miss., January 1 with \$20,000 capital. The Citizens' Bank, capital \$50,000, is

reported in process of organization at West Point, Miss.

Cookeville, Tenn.—The city has voted to issue \$25,000 of bonds for streets, electric lights and water-works.

Dallas, Texas.—The Dallas Terminal Railway & Union Depot Co. has been authorized to issue \$741,000 of bonds.

The Farmers' Bank of Tipton, Mo., capital \$12,500, has been incorporated by Jeff Renshaw, H. J. Becker, T. Luff and others.

The Bank of High Hill, Mo., has been incorporated with \$10,000 capital by John Jeffers, E. L. Davault, L. Harmon and others.

The Bank of Marshville has been chartered at Marshville, N. C., with \$10,000 capital by J. H. Lee of Monroe, N. C., and others.

The Citizens' Bank of Linnaus, Mo., capital \$30,000, has been chartered by T. L. McMichael, Roland Gooch, H. G. Stone and others.

The Hopkinsville Building and Loan Association of Christian county, Kentucky, has been reincorporated with \$100,000 capital stock.

The First National Bank of Bentonville, Ark., capital \$50,000, has been organized. G. P. Jackson is president, and D. W. Peel, cashier.

It is reported that a bank has been established at Skiatook, I. T., with \$10,000 capital. W. C. Rogers, chief of the Cherokees, is president.

The Union Investment Co. of Kansas City, Mo., capital \$10,000, has been incorporated by David Thornton, B. H. McGarvey and L. B. Knight.

The Citizens' Bank of Auxvasse, Callaway county, Missouri, capital \$30,000, has been chartered by T. P. Harrison, E. J. Grant, E. Harrison and others.

The People's Bank has been organized at Stamping Ground, Ky., with \$15,000 capital. The officers are A. Stuart, president; Jack Bridges, vice-president; Thurman Southworth, cashier.

The Charlotte Banking Co. is reported organized at Charlotte, Tenn., with H. L. W. Cook, president, and O. R. Leech, vice-president. The bank will be ready for business about March 1.

The First National Bank of Hyattsville, Md., capital \$40,000, has been organized by electing Francis H. Smith, president; Jackson H. Ralston, vice-president; Harry W. Shepherd, cashier.

The First National Bank of Haskell, I. T., capital \$25,000, has been approved. The organizers are Philip B. Hopkins, Muskogee, I. T.; J. C. Scully, J. Way, C. H. Chandler and S. O. Beshur.

The Bank of Clanton has been organized at Clanton, Ala., with \$15,000 capital. The incorporators are J. P. Hayes, P. D. Wilson, A. J. Mullins, N. A. Kicker, W. A. Sarton and E. A. Matthews.

The Citizens' National Bank of Runge, Texas, capital \$25,000, has been approved. E. G. Gillett, Runge, Texas; Frank Nusom, Wm. Heberer, Alfred Tips and Julius Bennett are the organizers.

The incorporation of the Citizens' Bank of Somerset, Pulaski county, Kentucky, is reported; capital \$25,000. The incorporators are George M. Reddish, Beecher Smith and Mitchell Taylor of Somerset.

The First National Bank of Bells, Texas, has been authorized to begin business with \$25,000 capital. The officers are W. B. Blanton, president; C. D. Padgett, vice-president; S. D. Simpson, cashier.

The First National Bank of Illmo, Mo., has been approved; capital \$25,000. The incorporators are S. R. Fitts, Illmo, Mo.; W. K. Murphy, Joseph Van Cloostere, H. O. Murphy, John M. Herbert and Willard Wall.

The Commercial National Bank of Goliad, Texas, has been approved; capital

\$30,000. J. C. Burns, Goliad, Texas; Emil Bergmann, J. B. McCampbell, John W. Cole and W. M. Albrecht are interested.

The First National Bank of Montgomery City, Mo., capital \$25,000, has been approved. The organizers are Frank S. Stover, Edward Kerwin, James H. Bentley, Simon Wehrman, Gustave Ittner and others.

The First National Bank of Porter, I. T., capital \$25,000, has been approved. The organizers are D. H. Middleton, Muskogee, I. T.; W. S. Narsha, John F. Chandler, Walter Howard and James M. Givens.

The Citizens' Bank of Americus, Ga., capital \$50,000, is being organized with the following officers: Frank Lanier, president; George W. Glover and Robert L. McMath, vice-presidents; William M. Jones, cashier; Macon Dudley, assistant cashier.

The Citizens' Bank of Union Point, Ga., capital \$25,000, has applied for a charter. The organizers are Benjamin F. Daniel, J. T. Carlton, J. H. Carlton, J. H. Jackson, O. G. Fluker, F. C. Nebhut, W. T. Nash, Ed V. Arnold and H. C. Hillard.

The Farmers' State Bank of Jefferson, O. T., with \$10,000 capital stock, has been authorized to begin business. John T. Stewart of Wellington, Kan., is president; E. F. Quigley, vice-president, and E. L. Quigley, cashier.

It is reported that a bank is being organized at Hamilton, Ga., with W. S. Witham as president. The application for a charter is signed by O. S. Barnes, B. H. Williams, J. H. Mobley, C. H. Cook and C. I. Hudson, Jr.

The Bank of Highland has been incorporated at Highland, Va., with capital of from \$10,000 to \$15,000, with the following directors: J. R. Gilliam, president, Lynchburg, Va.; J. A. Jones, Wier, Va.; F. G. Mauzy, Monterey, Va.

The Hennessey State Bank, successor of the Hennessey National Bank at Hennessey, O. T., has been authorized to begin business with a capital stock of \$10,000. The officers are W. W. Parks, president; John W. Smith, vice-president; C. C. Smith, cashier.

The Home Investment Co. of Guthrie, Oklahoma City and Tulsa, with \$100,000 capital stock, has been chartered in Oklahoma. Tulsa is in the Indian Territory. The incorporators are C. R. Brooks and E. Cook of Guthrie, William A. Brooks of Tonkawa, O. T.

The Empire Casualty Co. of Parkersburg, W. Va., capital \$150,000, has been incorporated by F. O. Hoener, John M. Crawford, S. L. Davidson, Daniel F. Connelley, J. H. P. Smith, W. J. Davidson, David B. Crawford and W. W. Van Winkle, all of Parkersburg.

The Bank of Newellton at Newellton, La., capital \$25,000, has begun business at Newellton, La. The officers are John Murdock, president; John Hughes, cashier, and Messrs. Frank Guttwin, Martin Jacoby, K. B. McMillan, Joe Isaacs and Adolph Elgutter, directors.

It is reported that a building and loan association is being organized at Gastonia, N. C., with \$100,000 capital stock, by C. B. Armstrong, A. G. Mangum, E. H. Tuttle, S. N. Boyce, G. A. Gray, T. M. Fayssoux, J. O. White, J. T. Thomson, H. F. Glenn, W. T. Rankin and J. E. Page.

The Concord Loan & Trust Co., organizing at Concord, N. C., has elected directors as follows: W. W. Morrison, N. F. Yorke, P. F. Stallings, A. J. Yorke, J. B. Green, J. L. Hartsell, C. O. Gillon, M. L. Marsh, A. N. James, H. L. Parks, W. A. Bost, D. D. Johnson, C. B. Wagner and B. L. Umberger.

The Jackson County Bank has been incorporated at Independence, Mo., with \$25,000 capital and the following officers: Ellis Short of Independence, president; M. H. Bond of Iowa, vice-president; William Wick of Independence, second vice-president, and J. D. Briggs, formerly of Lamoni, Iowa, cashier.

The Bank of Union has organized at Union, Miss., with the following directors: W. D. McRaven, S. M. Jones, W. R. Thames, T. A. Reagan, E. L. Carter, F. O. Horne and H. H. Chambliss. The officers are W. D. McRaven, Newton, president; S. M. Jones, Laurel, vice-president; H. H. Chambliss, cashier.

The First National Bank of Monongah, W. Va., capital \$25,000, has organized by electing officers as follows: President, Howard W. Showalter; vice-president, Carroll Curry; cashier, Sydney Holbert; board of directors, Carroll Curry, A. S. Holbert, Paul McCoy, Clarence Curry, Howard Showalter.

The Eagle Trust Bank, capital \$500,000, has been incorporated at St. Louis, Mo., by F. B. Murphy, Matthew J. Sheehan, David F. Williams, John Hompress, John H. Cardwill, John T. Lynn, Christian Claudy, Edwin W. Kring, C. F. Ragsdale, Harry W. Knost, G. W. Gray, Richard P. Jamison and Luther Schaeffer.

The Citizens' Bank has been organized at Lakeland, Fla.; capital \$50,000. The officers are R. O. Cresap, president; H. J. Drane, vice-president; C. M. Weeks, cashier; directors, R. O. Cresap, H. J. Drane, C. M. Weeks, Robert Bryant, J. W. Bryant, H. B. Carter, L. N. Pipkin, J. M. Keen, W. R. Groover, J. Q. Adams and L. F. Henley.

The Merchants' Building & Loan Association, capital stock \$500,000, has been incorporated at Kansas City, Mo., by J. W. Jenkins, John Moore, H. A. Guettel, B. Adler, Siegmund Harzfeld, I. E. Bernheimer, C. J. Schmelzer, J. J. Swofford, D. J. Dean, G. B. Peck, W. A. Rule, Sol Block, A. F. Seested, A. J. Liebstadter, Julius Davidson and I. Gottlieb.

The Southwest Bond & Trust Co. of Texas is the name of the new financial institution reported to be organizing at Austin, Texas. The controlling board was chosen as follows: Dr. M. A. Taylor, A. P. Wooldridge, J. H. Robinson, A. F. Hancock, Will C. Hogg, A. H. Cook, Austin; Dr. R. H. Eanes, Taylor; P. L. Downs, Temple; Vories P. Brown, San Antonio; Capt. S. S. Ash, Houston; T. A. Low, Brenham, and B. Cage, Stephenville.

The Pike County Bank of Murfreesboro, Ark., capital \$25,000, has applied for a charter. The incorporators are Charles Kelly, O. B. Owens, J. C. Pinnix, George Spencer, T. M. East, Jr., D. D. Duncan, M. A. Morris, John F. Davis, J. T. Stevens, W. H. Terrell, C. A. Kizzia, J. C. Hughes. The officers are J. C. Pinnix, president; J. F. Davis, vice-president; C. A. Kizzia, secretary and treasurer. The cashier has not yet been selected.

The Schroeder-Street Mechanics' Building Association No. 2, with \$300,000 capital stock, has been incorporated at Baltimore, Md., by O. Richter, William H. Brand, H. Edgar Johnson, August Carl, Joseph Opitz and Ferdinand L. Kense. The directors are John C. Sharp, James P. Farrell, Edward H. Rogers, August Carl, Joseph Opitz, Wm. H. Brand, Edward B. Chamberlain, Frederick L. Kense, George Yost, Henry Loewe and Dr. Robert J. Murray.

New Securities.

Anderson, Texas.—The attorney-general has approved \$5000 of 5 per cent. Anderson school bonds, 5-20s.

Big Stone Gap, Va.—The Interstate Finance & Trust Co. will sell \$250,000 of

30-year 6 per cent. bonds secured by mortgage on coal lands.

Columbia, S. C.—It is reported that a petition will be presented at the January meeting of the city council for an issue of bonds for water-works.

Corsicana, Texas.—The issue of \$150,000 of Navarro county courthouse bonds, 3 per cents, has been cancelled, and another issue will be proposed to bear 4 per cent. interest.

Fort Worth, Texas.—The Texas Cotton Products Co., G. P. Meade, receiver, has been authorized to issue \$35,000 of receivers' certificates.

Houston, Miss.—An election is soon to be held to vote on bonds for electric lights and water.

Lebanon, Va.—The supervisors of Russell county have voted to issue from \$18,000 to \$20,000 of 6 per cent. bonds, to run five or ten years, for a new jail and to remodel the courthouse. Of this amount \$8000 are to be sold within the next 30 days and the rest next spring. L. L. Bays, clerk of the board of supervisors, at Lebanon, Va., may be addressed.

Lufkin, Texas.—The attorney-general has approved \$8000 of Lufkin 5 per cent. water-works bonds, 10-20s.

Macon, Ga.—The city has sold the issue of \$40,000 of 4 per cent. sewer bonds to W. G. Solomon & Co. of Macon at a premium of 1½ per cent.

Martinsville, Va.—Bids will be received until noon on January 14 for \$30,000 of 5 per cent. electric-plant bonds issued by the town. R. W. Blair is chairman of the finance committee.

Nashville, Tenn.—The city council has passed a resolution which will be presented to the legislature asking for authority to issue \$500,000 of street bonds.

Newnan, Ga.—The city has sold the \$20,000 of 5 per cent. electric-light bonds to H. C. Harris & Co. of Chicago at their bid of \$21,618.

New Orleans, La.—The board of port commissioners has decided to sell \$750,000 of bonds. Hugh McCloskey is president.

Valdosta, Ga.—The city has sold the issue of \$35,000 of high-school bonds at 108.83½ to John W. Dickey of Augusta, Ga.

Statesville, N. C.—A proposition is under consideration to issue water and sewer bonds.

Taylor, Texas.—The city has sold to J. B. Oldham of Dallas \$25,000 of 5 per cent. city-hall bonds.

Winchester, Va.—The city has sold \$38,000 of refunding bonds. The Farmers and Merchants' National Bank of Winchester and Baker, Watts & Co. of Baltimore purchased \$33,000 and the Shenandoah Valley National Bank of Winchester bought \$5000. They brought a premium.

Messrs. N. W. Harris & Co., 48 Pine street, New York, are offering for sale \$500,000 of first mortgage 5 per cent. 30-year bonds of the Union Electric Light & Power Co. of St. Louis.

Further particulars will be found in the advertising columns.

An unsold balance of a lot of \$2,877,000 general first mortgage 4 per cent. gold bonds of the United Railways Co. of St. Louis, Mo., is being offered for sale by Spencer Trask & Co. of New York city and Albany, N. Y.; F. S. Smithers & Co. of New York city and the Mercantile Trust Co. of St. Louis.

Further particulars will be found in the advertising columns.

Financial Notes.

The Caldwell National Bank of Caldwell, Texas, has increased its capital from \$25,000 to \$40,000.

The Memphis Trust Co. of Memphis, Tenn., proposes to increase its capital from \$700,000 to \$1,000,000.

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The Alabama Home Building & Loan Association has increased its capital stock from \$2,000,000 to \$3,000,000.

The Sea Island Bank of Statesboro, Ga., has amended its charter to increase its capital from \$25,000 to \$50,000.

The Union Bank & Trust Co. of Jackson, Tenn., proposes to increase its capital from \$50,000 to \$100,000, and to also raise the surplus from \$8500 to \$17,000.

A report from Birmingham, Ala., says that the Alabama National Bank will be merged with the American Trust and Savings Bank on January 10, and that the latter will occupy the building of the former institution.

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